



(REFERENCE COPY - Not for submission)

Channel Substitution/Community of License Change

File Number: **0000144525** | Submit Date: **05/04/2021** | Call Sign: **WGEM-TV** | Facility ID: **54275** | FRN: **0025018045** |
State: **Illinois** | City: **QUINCY**
Service: **DTV** | Purpose: **Rule Making** | Status: **Pending** | Status Date: **05/04/2021** | Filing Status: **Active**

General Information

Section	Question	Response
Attachments	Are attachments (other than associated schedules) being filed with this application?	Yes

Applicant Information

Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
WGEM LICENSE, LLC Doing Business As: WGEM LICENSE, LLC	P.O. BOX 909 QUINCY, IL 62306 United States	+1 (217) 223- 5100	bdreasler@quincymedia. com	Limited Liability Company

Authorization Holder Name

Check box if the Authorization Holder name is being updated because of the sale (or transfer of control) of the Authorization(s) to another party and for which proper Commission approval has not been received or proper notification provided.

Contact
Representatives
(3)

Contact Name	Address	Phone	Email	Contact Type
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Channel and Facility Information

Section	Question	Response
Proposed Community of License	Facility ID	54275
	State	Illinois
	City	QUINCY
	DTV Channel	19
	Designated Market Area	Quincy-Hannibal-Keokuk
Zone	Zone	1

Antenna Location Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	Yes
	ASR Number	1011390
Coordinates (NAD83)	Latitude	39° 57' 04.0" N+
	Longitude	091° 19' 54.0" W-
	Structure Type	GTOWER-Guyed Structure Used for Communication Purposes
	Overall Structure Height	205.4 meters
	Support Structure Height	182.9 meters
	Ground Elevation (AMSL)	231.6 meters
Antenna Data	Height of Radiation Center Above Ground Level	196.6 meters
	Height of Radiation Center Above Average Terrain	238 meters
	Height of Radiation Center Above Mean Sea Level	428.2 meters
	Effective Radiated Power	1000 kW

Antenna
Technical Data

Section	Question	Response
Antenna Type	Antenna Type	Non-Directional
	Do you have an Antenna ID?	Yes
	Antenna ID	92209
Antenna Manufacturer and Model	Manufacturer:	Dielectric
	Model	TFU-24GTH/VP-RO4
	Rotation	
	Electrical Beam Tilt	0.5
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Elliptical
DTV and DTS: Elevation Pattern	Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?	No
	Uploaded file for elevation antenna (or radiation) pattern data	

Certification

Section	Question	Response
General Certification Statements	The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by authorization or otherwise, and requests an Authorization in accordance with this application (See Section 304 of the Communications Act of 1934, as amended.).	
	The Applicant certifies that neither the Applicant nor any other party to the application is subject to a denial of Federal benefits pursuant to §5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. §862, because of a conviction for possession or distribution of a controlled substance. This certification does not apply to applications filed in services exempted under §1.2002(c) of the rules, 47 CFR . See §1.2002(b) of the rules, 47 CFR §1.2002(b), for the definition of "party to the application" as used in this certification §1.2002 (c). The Applicant certifies that all statements made in this application and in the exhibits, attachments, or documents incorporated by reference are material, are part of this application, and are true, complete, correct, and made in good faith.	
Authorized Party to Sign	FAILURE TO SIGN THIS APPLICATION MAY RESULT IN DISMISSAL OF THE APPLICATION AND FORFEITURE OF ANY FEES PAID Upon grant of this application, the Authorization Holder may be subject to certain construction or coverage requirements. Failure to meet the construction or coverage requirements will result in automatic cancellation of the Authorization. Consult appropriate FCC regulations to determine the construction or coverage requirements that apply to the type of Authorization requested in this application. WILLFUL FALSE STATEMENTS MADE ON THIS FORM OR ANY ATTACHMENTS ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. Code, Title 18, §1001) AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, §312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, §503).	
	I certify that this application includes all required and relevant attachments.	Yes
	I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.	Ralph M. Oakley <i>President</i> 05/04/2021

Attachments

File Name	Uploaded By	Attachment Type	Description
<u>WGEM-TV -- Exhibit for Channel Change Petition for Rulemaking (April 2021) (Channel 10 to Channel 19).pdf</u>	Applicant	All Purpose	Exhibit for Channel Change Petition for Rulemaking (April 2021) (Channel 10 to Channel 19)
<u>WGEM-TV TechExhibit_RM-PET20210331.pdf</u>	Applicant	All Purpose	Technical Statement

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of Amendment of Section 73.622,
Digital Television Table of Allotments
For WGEM-TV, Quincy, Illinois
(Facility ID 54275)

MB Docket No. _____

Rulemaking No. _____

To: Office of the Secretary, Federal Communications Commission
Attn: Chief, Media Bureau

PETITION FOR RULEMAKING

WGEM License, LLC (“QMI”), licensee of full power commercial television station WGEM-TV (“WGEM”), Quincy, Illinois, requests that the Commission institute a rulemaking proceeding to amend the DTV Table of Allotments (the “DTV Table”) in Section 73.622(i) of the Commission’s rules.¹ WGEM requests that the Commission amend the DTV Table to substitute UHF Channel 19 in the place of VHF Channel 10, with the technical parameters as set forth in the attached “Technical Statement Re: Petition for Rulemaking to Modify a DTV Allotment WGEM-TV Quincy, Illinois” prepared by Lohnes & Culver, LLC (the “Engineering Statement”). Granting this Petition will create a preferential arrangement of allotments by expanding the availability of free over-the-air television service in WGEM’s market.

The overarching purpose behind the DTV Table is to “ensure that the spectrum is used efficiently and effectively . . . and to ensure that . . . digital TV fully serves the public interest.”² When considering a channel substitution petition, the Commission analyzes the

¹ See 47 C.F.R. §§ 1.401, 1.420, 73.622(i).

² See *In re Advanced Television Systems & Their Impact Upon the Existing Television Broadcast Service*, 12 FCC Rcd. 14588, ¶¶ 1, 76 (1997).

proposal's effect on the public interest, including whether the proposed channel change would comply with the principal community coverage requirements of Section 73.625(a) of the Commission's rules and satisfy the technical requirements of Sections 73.616 and 73.623 of the rules.³

In the present case, WGEM's proposed channel substitution would serve the public interest by likely resolving current reception challenges in WGEM's existing service area. WGEM's currently authorized VHF Channel 10 has difficulty reaching all members of the population within its service area, particularly at the fringes, and has had such difficulty since the June 12, 2009, digital transition. This difficulty is not uncommon among TV broadcasters with VHF channel assignments—as recognized by the Commission over ten years ago, “VHF channels have certain characteristics that have posed challenges for their use in providing digital television service,” including that “the propagation characteristics of these channels allow undesired signals and noise to be receivable at relatively farther distances, nearby electrical devices tends to emit noise in this band that can cause interference, and reception of VHF signals requires physically larger antennas . . . relative to UHF channels.”⁴

QMI has previously attempted to address the foregoing reception issues through multiple technical avenues, including by installing a dual antenna system to achieve elliptical polarization, installing a higher-power transmitter, and, most recently, filing a minor change “maximization” application and corresponding request for waiver of the maximum permissible

³ See, e.g., *In re Amend. of Section 73.622(i), Post-Transition Table of DTV Allotments, Television Broad. Stations (Medford, Oregon)*, Notice of Proposed Rulemaking, DA 21-436 (rel. Apr. 16, 2021).

⁴ See *In re of Innovation in the Broadcast Television Bands: Allocations, Channel Sharing and Improvements to VHF*, Notice of Proposed Rulemaking, 25 FCC Rcd 16498, ¶¶ 42, 44 (2010) (noting that record evidence demonstrated “large variability in the performance (especially intrinsic gain) of indoor antennas available to consumers, with most antennas receiving fairly well at UHF and the substantial majority not so well to very poor at high-VHF”).

power limits of Section 73.622(f) of the Commission’s rules. *See* LMS File Nos. 0000035730 (application for minor modification of BMLCDT-20130328AMI), 0000105998 (license to cover same); *see also* STA File Nos. BDSTA-20100107AED, BEDSTA-20101102ACB, BEDSTA-20120221AAN, BEDSTA-20120919ACE (filings relating to transmitter and antenna changes). Unfortunately, none of those steps have resolved WGEM’s documented reception issues, and WGEM has continued to “receive[] numerous complaints of poor or no reception from viewers.”⁵

Because substituting a UHF channel in place of a VHF channel is likely to remedy reception issues such as those WGEM’s viewers have now experienced for over decade, the Commission has time and again recognized that the public interest is served by a channel substitution such as the one QMI’s Petition proposes.⁶ QMI therefore respectfully requests similar treatment for this Petition, especially given QMI’s well-documented history of diligence in attempting to remedy the underlying reception issues by various other means.

The attached Engineering Statement sets forth in detail the proposed WGEM Channel 19 DTV Table specifications. This proposal complies with all relevant technical requirements for amendment of the DTV Table, including the interference protection requirements of 47 C.F.R. § 73.616 and the 0.5% de minimis interference standard with respect to all allotments and

⁵ LMS File No. 0000035730, WGEM-TV - Waiver Request Exhibit.

⁶ *See, e.g., In re Amend. of Section 73.622(i), Post-Transition Table of DTV Allotments, Television Broad. Stations (Mesa, Arizona)*, DA 20-1436 (rel. Dec. 2, 2020) (“We believe the public interest would be served by substituting DTV channel 18 for channel 12 at Mesa. The channel substitution will permit the station to better serve its viewers, who have experienced reception problems with VHF channel 12.”); *In re Amend. of Section 73.622(i), Post-Transition Table of DTV Allotments, Television Broad. Stations (Columbia, Missouri)*, DA 21-268 (rel. Mar. 4, 2021) (same); *In re Section 73.622(i), Post-Transition Table of DTV Allotments, Television Broad. Stations (Jefferson City, Missouri)*, DA 21-422 (rel. Apr. 14, 2021).

assignments, existing and proposed.⁷ The proposed Channel 19 facilities will provide full principal community coverage to Quincy, Illinois.⁸

As further demonstrated by the attached Engineering Statement, when compared to WGEM's current Channel 10 DTV allotment, the proposed Channel 19 facilities will not create any predicted service loss under terrain-limited service analysis.⁹ Although the proposed Channel 19 facilities will result in a slight reduction (no more than 9.4 kilometers) in WGEM's noise-limited service contour ("NLSC"), predictions using the Longley-Rice propagation model demonstrate that this slight gap between the current Channel 10 NLSC and the proposed Channel 19 NLSC will not result in any actual service loss—i.e., WGEM's "proposal is predicted to result in no loss of service."¹⁰ Further, any such loss predictions necessarily fail to account for the service challenges many WGEM viewers are currently experiencing due to Channel 10's VHF propagation characteristics, challenges that WGEM predicts will be remedied by switching to UHF operations on Channel 19.

For the foregoing reasons, QMI respectfully requests that the Commission grant this Petition and immediately commence a rulemaking proceeding to change the digital allotment for WGEM-TV from Channel 10 to Channel 19 as proposed herein.

⁷ Engineering Statement, at 2, fig. 1.

⁸ *Id.* at 2–3, fig. 2.

⁹ *See id.* at 3–4, n.6 (describing methodology); *id.* at 11 (Loss Area Analysis demonstrating "0" for "[t]otal service lost due to the Proposed Ch. 19 Assignment"); *see also*, e.g., LMS File No. 0000116419 (channel change granted where terrain-limited methodology used).

¹⁰ *Id.* at 3–4, fig. 3.

Respectfully submitted,

WGEM LICENSE, LLC

By:



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Dated: May 3, 2021

**TECHNICAL STATEMENT
RE: PETITION FOR RULEMAKING
TO MODIFY A DTV ALLOTMENT
WGEM-TV QUINCY, ILLINOIS**

INTRODUCTION

This technical statement has been prepared on behalf of WGEM License, LLC (“WGEM”), the licensee of WGEM-TV, Channel 10, Quincy, IL (Facility ID 54275), in support of a *Petition for Rulemaking* to request the substitution of Channel 19 for Channel 10 at Quincy, IL in the DTV Table of Allotments.¹ WGEM-TV is currently licensed to operate on Channel 10 in accordance with the technical parameters specified in FCC File No. 0000105998.

WGEM’s petition is being submitted pursuant to the Commission’s recent decision to lift the freeze on the filing of petitions for digital channel substitutions, which became effective on November 27, 2020.² All calculations, elevations, contours and other technical data provided herein have been determined in accordance with the technical standards of the Federal Communications Commission (FCC), unless specifically stated otherwise.

BACKGROUND

WGEM-TV has been experiencing difficulty in ensuring consistent reception of its VHF signal since the station flash-cut to digital operations on June 12, 2009. It is well-known that indoor reception is difficult for digital VHF stations such as WGEM-TV due to the widespread use by viewers of ineffective indoor antennas, inability to achieve adequate building penetration and high levels of consumer electronic noise. The Commission has recognized that the VHF spectrum has certain propagation characteristics that cause reception challenges for viewers, including the need of an antenna that is larger than required for reception of UHF signals.³

¹ For requests to amend the Table of Allotments, the FCC Video Division has clarified that it will continue to refer to the Post-Transition Table of DTV Allotments, 47 CFR § 73.622(i) (2018) because the Media Bureau has not yet amended the rules to reflect the new channel assignments established through the incentive auction and television repack process.

² See *Media Bureau Lifts Freeze On The Filing Of Television Station Minor Modification Applications And Rulemaking Petitions Effective Fifteen Days After Publication In The Federal Register*, Public Notice, DA 20-1269 (rel. Oct. 29, 2020).

³ *Innovation in the Broadcast Television Bands: Allocations, Channel Sharing and Improvements to VHF*, ET Docket No. 10-235, Notice of Proposed Rulemaking, 25 FCC Rcd 16498, 16511, para. 42 (2010).



Because the UHF spectrum is known to provide a more robust signal for in-home reception, it is anticipated that a grant of the proposed channel substitution would enable WGEM-TV to do a better job of serving the public.

PROPOSED ALLOTMENT CHANGE

No change in WGEM-TV's antenna location is proposed. The station will continue to utilize the tower structure associated with FCC Antenna Structure Registration ("ASR") number 1011390. To facilitate WGEM-TV's transition to Channel 19, it is proposed that the station replace its existing top-mounted VHF antenna with a new UHF antenna.

The current technical parameters authorized for nondirectional operation on Channel 10 are 39.1 kW effective radiated power (ERP) and 238 meters antenna height above average terrain (HAAT). This channel substitution proposal seeks to utilize 1000 kW ERP nondirectional on Channel 19 while maintaining the antenna HAAT at 238 meters. A summary of the present and proposed technical parameters are provided in the following tables:

Table 1 - Present Channel 10 Parameters (FCC File No. 0000105998)

FacID	Call	Ch	City	St	Lat	Lon	RCAMSL	HAAT	ERP	DA
54275	WGEM-TV	10	QUINCY	IL	395704	911954	428.2	238	39.1	ND

Table 2 - Proposed Channel 19 Parameters

FacID	Call	Ch	City	St	Lat	Lon	RCAMSL	HAAT	ERP	DA
54275	WGEM-TV	19	QUINCY	IL	395704	911954	428.2	238	1000	ND

TECHNICAL REQUIREMENTS

Channel 19 can be substituted for Channel 10, based on the maximum technical parameters shown in Table 2, in full compliance with the 0.5 percent interference protection requirement in 47 CFR § 73.616. A detailed *TVStudy* analysis was performed to evaluate the proposed Channel 19 parameters and the results indicate no interference check failures were found.⁴ A copy of the analysis is attached as Figure 1.

A map is provided in Figure 2 that shows the predicted 39.3 dBu noise-limited service contour (NLSC) and the 48 dBu principal community contour of the proposed Channel 19 facility

⁴ *TVStudy* Program - Version 2.2.5 was utilized to evaluate this proposal based on the default Interference Check template normally used for application processing. The default cell size of 2 km in 47 CFR §73.616(e)(1) and the standard terrain profile point spacing of 1 km were also used.



specified in Table 2. This map demonstrates that the proposal will provide a 48 dBu F(50,90) signal over the entire community of Quincy, IL in accordance with the principal community coverage requirements of 47 CFR § 73.625(a) ⁵

The foregoing paragraphs demonstrate that the proposed channel change is in full compliance with the *Minimum Technical Criteria for Modification of DTV Allotments* in 47 CFR § 73.623.

NO LOSS OF SERVICE

Although this proposal seeks to utilize the maximum permissible ERP of 1000 kW for a UHF channel, the resulting Channel 19 NLSC falls short of matching the present Channel 10 coverage as depicted in Figure 3. The FCC considers the public interest benefits when a television broadcast facility proposes a reduction in service area as WGEM proposes here. In this case, the proposed Channel 19 NLSC is as much as 9.4 kilometers smaller than the present Channel 10 NLSC when coverage is determined using the FCC's standard F(50,90) prediction method.

It has been determined using the terrain-limited service methodology described below that the gap area between the Channel 19 contour and the larger Channel 10 contour will not lose service based upon predictions using the Longley-Rice propagation model, which indicates Channel 19 will have extended terrain-limited service throughout the entire gap area. In making this determination, the TVStudy program was used to predict the present and proposed signals within the "fixed geography" associated with the larger coverage footprint of the Channel 10 facility.⁶ The resulting geographical files (coverpts.shp) were imported into a mapping program where discrete layers for each channel were created. The layer designated as Layer 1 shows the cells predicted to receive terrain-limited service from Channel 10 and Layer 2 shows the cells that receive equivalent service from Channel 19. These layers were then color coded as follows:⁷

⁵ The community of Quincy, IL shown in Figure 2 reflects the 2010 Census Designated Place boundaries.

⁶ The General-purpose TV function of the TVStudy program was used to perform the present and proposed studies, which were run in the "fixed geography" study area mode using the polygon option to import a shp file containing the present Channel 10 NLSC.

⁷ The coverpts files that the TVStudy program produced contain the resulting Longley-Rice study points (or cells) and their codes. Because these geographical files were generated without regard to inbound interference, it was possible to use mapping software to filter and plot the cells based on Codes 1 and 11, which in the absence of interference are codes that equate to terrain-limited service.



Table 3 – Color Codes

Terrain-limited Service	Channel	Cell Color	Layer
Present	10	Red	1
Proposed	19	Green	2

Figure 3 shows the results of overlaying the green cells of the proposed channel in Layer 2 on top of the red cells of the present channel in Layer 1. In this scenario the absence of a green cell would allow the cell underneath in Layer 1 to show through and thus any uncovered red cells would indicate a loss of service. Because Figure 3 does not show any visible red cells, the proposal is predicted to result in no loss of service.

CONCLUSION

For all the reasons stated above, the proposed DTV allotment modification complies with the FCC's principal community coverage requirements of 47 CFR § 73.625(a) and meets the technical requirements set forth in 47 CFR §§ 73.616 and 73.623. It also will result in no loss of service and, therefore, the proposal warrants the FCC's consideration.

Respectfully submitted,



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March 31, 2021

List of Attachments

Figure 1 - TVStudy Analysis Results
Figure 2 - Proposed Service Contours
Figure 3 - Loss Area Analysis – Terrain-Limited Methodology

FIGURE 1 TVStudy Analysis Results Version 2.2.5.

tvstudy v2.2.5 (4uoc83)
Database: localhost, Study: WGEN-TV CH. 19 #843, Model: Longley-Rice
Start: 2021.03.31 19:23:28

Study created: 2021.03.31 19:23:28

Study build station data: LMS TV 2021-03-31

Proposal: WGEN-TV D19 DT APP QUINCY, IL
File number: WGEN-TV CH. 19
Facility ID: 54275
Station data: User record
Record ID: 678
Country: U.S.
Zone: 1

Search options:
Baseline record excluded if station has QP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City	State	File Number	Distance
Yes	WSEC	D18	DT	LIC	JACKSONVILLE, IL		BLANK0000117568	116.4 km
Yes	WSEC	D18	DT	CP	JACKSONVILLE, IL		BLANK0000129544	116.4
Yes	KOMI	D19	DT	LIC	DES MOINES, IA		BL00T20120627AAE	283.6
Yes	KOMI	D19	DT	APP	DES MOINES, IA		BP00T20130205AMM	283.6
Yes	WGN-TV	D19	DT	LIC	CHICAGO, IL		BML00T20080201APP	377.1
Yes	WGN-TV	D19	DT	CP	CHICAGO, IL		BLANK0000127570	377.1
Yes	WPSD-TV	D19	DT	LIC	PADUCAH, KY		BLANK0000116960	368.4
Yes	KYTV	D19	DT	LIC	SPRINGFIELD, MO		BLANK0000073156	338.9
Yes	WMTV	D19	DT	LIC	MADISON, WI		BL00T20100413AAM	377.2
No	WAND	D20	DT	LIC	DECATUR, IL		BLANK0000115806	212.9
No	KILJ	D20	DT	LIC	JEFFERSON CITY, MO		BL00T20101212ACA	153.1
No	KEFN-CD	D20z	DC	LIC	ST. LOUIS, MO		BLANK0000054925	187.3
No	KEFN-CD	D20z	DC	CP	ST. LOUIS, MO		BLANK0000138213	176.6

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
Latitude: 39 57 4.00 N (NAD83)
Longitude: 91 19 54.00 W
Height AMSL: 428.2 m
HAAT: 238.0 m
Peak ERP: 1000 kW
Antenna: Omnidirectional

Elev Pattn: Generic
Elec Tilt: 0.50

39.3 dBu contour:
Azimuth ERP HAAT Distance
0.0 deg 1000 kW 222.7 m 89.7 km
45.0 1000 211.1 88.1
90.0 1000 209.8 88.0
135.0 1000 224.1 89.9
180.0 1000 243.2 92.8
225.0 1000 267.0 96.3
270.0 1000 271.1 96.9
315.0 1000 265.0 96.0

Database HAAT does not agree with computed HAAT
Database HAAT: 238 m Computed HAAT: 239 m

Distance to Canadian border: 724.3 km

Distance to Mexican border: 1455.2 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 54.9 degrees Distance: 537.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 275.6 degrees Distance: 1181.1 km

No land mobile station failures found

Study cell size: 2.00 km
Profile point spacing: 1.00 km

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

Interference to BLANK0000117568 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City	State	File Number	Distance
	WSEC	D18	DT	LIC	JACKSONVILLE, IL		BLANK0000117568	
Undesireds:	WGEN-TV	D19	DT	APP	QUINCY, IL		WGEN-TV CH. 19	116.4 km
	WBXC-CD	D18	DC	LIC	CHAMPAIGN/URBANA, IL		BLANK0000112220	163.9
	WAWV-TV	D18	DT	LIC	TERRE HAUTE, IN		BLANK0000087258	231.4
Service area			Terrain-limited	IX-free, before			IX-free, after	Percent New IX
20020.4	541,118	19924.7	540,495	19908.8	540,405	19833.1	539,855	0.38 0.10

Undesired		Total IX	Unique IX, before	Unique IX, after
WGEN-TV D19 DT APP	79.7	560	75.7	550
WBXC-CD D18 DC LIC	4.0	10	4.0	0
WAWV-TV D18 DT LIC	12.0	80	12.0	80

Interference to BLANK0000129544 CP scenario 1

Desired:	Call	Chan	Svc	Status	City	State	File Number	Distance
	WSEC	D18	DT	CP	JACKSONVILLE, IL		BLANK0000129544	
Undesireds:	WGEN-TV	D19	DT	APP	QUINCY, IL		WGEN-TV CH. 19	116.4 km
	WAWV-TV	D18	DT	LIC	TERRE HAUTE, IN		BLANK0000087258	231.4
Service area			Terrain-limited	IX-free, before			IX-free, after	Percent New IX
20028.4	538,090	19908.8	536,891	19896.9	536,811	19821.1	536,261	0.38 0.10

Undesired											
WGEM-TV D19 DT APP		75.7	Total IX		550	Unique IX, before		Unique IX, after		75.7	550
WAWV-TV D18 DT LIC		12.0			80	12.0		80		12.0	80
Interference to BLCDDT20120627AAE LIC scenario 1											
Desired:		Call KOMI	Chan D19	Svc DT	Status LIC	City, State DES MOINES, IA	File Number BLCDDT20120627AAE		Distance		
Undesireds:		WGEM-TV	D19	DT	APP	QUINCY, IL	WGEM-TV CH, 19		283.6 km		
		KYIN	D18	DT	LIC	MASON CITY, IA	BLEDDT20090612AHJ		197.4		
		KXNE-TV	D19	DT	CP	NORFOLK, NE	BLANK0000035898		305.8		
		WMTV	D19	DT	LIC	MADISON, WI	BLCDDT20100413AAW		364.7		
		KETV	D20	DT	CP	OMAHA, NE	BLANK0000127497		208.7		
Service area		47883.0	1,141,990	Terrain-limited		47642.0	1,140,939	IX-free, before		IX-free, after	
								47364.4	1,136,269	46951.3	1,134,064
Percent New IX										0.87	0.19
Undesired											
WGEM-TV D19 DT APP		413.1	Total IX		2,205	Unique IX, before		Unique IX, after		413.1	2,205
KYIN D18 DT LIC		32.0			70	32.0		70		32.0	70
KXNE-TV D19 DT CP		217.5			2,003	209.4		1,983		209.4	1,983
WMTV D19 DT LIC		24.1			2,597	24.1		2,597		24.1	2,597
KETV D20 DT CP		12.1			20	4.0		0		4.0	0
Interference to BLCDDT20120627AAE LIC scenario 2											
Desired:		Call KOMI	Chan D19	Svc DT	Status LIC	City, State DES MOINES, IA	File Number BLCDDT20120627AAE		Distance		
Undesireds:		WGEM-TV	D19	DT	APP	QUINCY, IL	WGEM-TV CH, 19		283.6 km		
		KYIN	D18	DT	LIC	MASON CITY, IA	BLEDDT20090612AHJ		197.4		
		KXNE-TV	D19	DT	CP	NORFOLK, NE	BLANK0000035898		305.8		
		WMTV	D19	DT	LIC	MADISON, WI	BLCDDT20100413AAW		364.7		
		KETV	D20	DT	LIC	OMAHA, NE	BLCDDT20041222AED		208.7		
Service area		47883.0	1,141,990	Terrain-limited		47642.0	1,140,939	IX-free, before		IX-free, after	
								47368.4	1,136,269	46955.3	1,134,064
Percent New IX										0.87	0.19
Undesired											
WGEM-TV D19 DT APP		413.1	Total IX		2,205	Unique IX, before		Unique IX, after		413.1	2,205
KYIN D18 DT LIC		32.0			70	32.0		70		32.0	70
KXNE-TV D19 DT CP		217.5			2,003	209.4		1,983		209.4	1,983
WMTV D19 DT LIC		24.1			2,597	24.1		2,597		24.1	2,597
KETV D20 DT LIC		8.1			20	0.0		0		0.0	0
Interference to BLCDDT20120627AAE LIC scenario 3											
Desired:		Call KOMI	Chan D19	Svc DT	Status LIC	City, State DES MOINES, IA	File Number BLCDDT20120627AAE		Distance		
Undesireds:		WGEM-TV	D19	DT	APP	QUINCY, IL	WGEM-TV CH, 19		283.6 km		
		KYIN	D18	DT	LIC	MASON CITY, IA	BLEDDT20090612AHJ		197.4		
		KXNE-TV	D19	DT	CP	NORFOLK, NE	BLEDDT20090615ADS		305.8		
		WMTV	D19	DT	LIC	MADISON, WI	BLCDDT20100413AAW		364.7		
		KETV	D20	DT	CP	OMAHA, NE	BLANK0000127497		208.7		
Service area		47883.0	1,141,990	Terrain-limited		47642.0	1,140,939	IX-free, before		IX-free, after	
								47396.7	1,137,022	46983.6	1,134,817
Percent New IX										0.87	0.19
Undesired											
WGEM-TV D19 DT APP		413.1	Total IX		2,205	Unique IX, before		Unique IX, after		413.1	2,205
KYIN D18 DT LIC		32.0			70	32.0		70		32.0	70
KXNE-TV D19 DT LIC		185.2			1,250	177.1		1,230		177.1	1,230
WMTV D19 DT LIC		24.1			2,597	24.1		2,597		24.1	2,597
KETV D20 DT CP		12.1			20	4.0		0		4.0	0

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Interference to BLCDDT20120627AAE LIC scenario 4										
Desired:	Call KOMI	Chan D19	Svc DT	Status LIC	City, State DES MOINES, IA	File Number BLCDDT20120627AAE	Distance			
Undesireds:	WGEM-TV KYIN KXNE-TV WMTV KETV	D19 D18 D19 D19 D20	DT DT DT DT DT	APP LIC CP LIC CP	QUINCY, IL MASON CITY, IA NORFOLK, NE MADISON, WI OMAHA, NE	WGEM-TV CH, 19 BLEDDT20090612AHJ BLEDDT20090615ADS BLCDDT20100413AAW BLCDDT20041222AED	283.6 km 197.4 305.8 364.7 208.7			
Service area										
47883.0	1,141,990	Terrain-limited		47642.0	1,140,939	IX-free, before 47400.7	1,137,022	IX-free, after 46987.6	1,134,817	Percent New IX 0.87 0.19
Undesired										
WGEM-TV D19 DT APP	413.1	Total IX		2,205	Unique IX, before		413.1	Unique IX, after		
KYIN D18 DT LIC	32.0	70		32.0	70		32.0	2,205		
KXNE-TV D19 DT LIC	185.2	1,250		177.1	1,230		177.1	1,230		
WMTV D19 DT LIC	24.1	2,597		24.1	2,597		24.1	2,597		
KETV D20 DT LIC	8.1	20		0.0	0		0.0	0		
Interference to BPCDDT20130205AAM APP scenario 1										
Desired:	Call KOMI	Chan D19	Svc DT	Status APP	City, State DES MOINES, IA	File Number BPCDDT20130205AAM	Distance			
Undesireds:	WGEM-TV KYIN KXNE-TV WMTV KETV	D19 D18 D19 D19 D20	DT DT DT DT DT	APP LIC CP LIC CP	QUINCY, IL MASON CITY, IA NORFOLK, NE MADISON, WI OMAHA, NE	WGEM-TV CH, 19 BLEDDT20090612AHJ BLANK0000035898 BLCDDT20100413AAW BLANK0000127497	283.6 km 197.4 305.8 364.7 208.7			
Service area										
49377.5	1,175,179	Terrain-limited		49112.4	1,174,026	IX-free, before 48790.7	1,171,723	IX-free, after 48353.8	1,169,603	Percent New IX 0.90 0.18
Undesired										
WGEM-TV D19 DT APP	444.9	Total IX		2,135	Unique IX, before		436.9	Unique IX, after		
KYIN D18 DT LIC	44.0	127		44.0	127		44.0	2,120		
KXNE-TV D19 DT CP	249.6	1,230		229.4	1,190		229.4	1,190		
WMTV D19 DT LIC	24.1	946		24.1	946		16.1	931		
KETV D20 DT CP	24.2	40		4.0	0		4.0	0		
Interference to BPCDDT20130205AAM APP scenario 2										
Desired:	Call KOMI	Chan D19	Svc DT	Status APP	City, State DES MOINES, IA	File Number BPCDDT20130205AAM	Distance			
Undesireds:	WGEM-TV KYIN KXNE-TV WMTV KETV	D19 D18 D19 D19 D20	DT DT DT DT DT	APP LIC CP LIC CP	QUINCY, IL MASON CITY, IA NORFOLK, NE MADISON, WI OMAHA, NE	WGEM-TV CH, 19 BLEDDT20090612AHJ BLANK0000035898 BLCDDT20100413AAW BLCDDT20041222AED	283.6 km 197.4 305.8 364.7 208.7			
Service area										
49377.5	1,175,179	Terrain-limited		49112.4	1,174,026	IX-free, before 48794.7	1,171,723	IX-free, after 48357.8	1,169,603	Percent New IX 0.90 0.18
Undesired										
WGEM-TV D19 DT APP	444.9	Total IX		2,135	Unique IX, before		436.9	Unique IX, after		
KYIN D18 DT LIC	44.0	127		44.0	127		44.0	2,120		
KXNE-TV D19 DT CP	249.6	1,230		229.4	1,190		241.5	1,210		
WMTV D19 DT LIC	24.1	946		24.1	946		16.1	931		
KETV D20 DT LIC	8.1	20		0.0	0		0.0	0		
Interference to BPCDDT20130205AAM APP scenario 3										
Desired:	Call KOMI	Chan D19	Svc DT	Status APP	City, State DES MOINES, IA	File Number BPCDDT20130205AAM	Distance			
Undesireds:	WGEM-TV KYIN KXNE-TV WMTV KETV	D19 D18 D19 D19 D20	DT DT DT DT DT	APP LIC CP LIC CP	QUINCY, IL MASON CITY, IA NORFOLK, NE MADISON, WI OMAHA, NE	WGEM-TV CH, 19 BLEDDT20090612AHJ BLANK0000035898 BLCDDT20100413AAW BLCDDT20041222AED	283.6 km 197.4 305.8 364.7 208.7			
Service area										
49377.5	1,175,179	Terrain-limited		49112.4	1,174,026	IX-free, before 48794.7	1,171,723	IX-free, after 48357.8	1,169,603	Percent New IX 0.90 0.18
Undesired										
WGEM-TV D19 DT APP	444.9	Total IX		2,135	Unique IX, before		436.9	Unique IX, after		
KYIN D18 DT LIC	44.0	127		44.0	127		44.0	2,120		
KXNE-TV D19 DT CP	249.6	1,230		229.4	1,190		241.5	1,210		
WMTV D19 DT LIC	24.1	946		24.1	946		16.1	931		
KETV D20 DT LIC	8.1	20		0.0	0		0.0	0		

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Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KOMI	D19	DT	APP	DES MOINES, IA	BPCDT20130205AAM	
Undesireds:	WGEM-TV	D19	DT	APP	QUINCY, IL	WGEM-TV CH. 19	283.6 km
	KYIN	D18	DT	LIC	MASON CITY, IA	BLEDT20090612AHJ	197.4
	KXNE-TV	D19	DT	LIC	NORFOLK, NE	BLEDT20090615ADS	305.8
	WMTV	D19	DT	LIC	MADISON, WI	BLCDT20100413AAM	384.7
	KETV	D20	DT	CP	OMAHA, NE	BLANK0000127497	208.7
Service area							
49377.5	1,175,179	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
		49112.4	1,174,026	48790.7	1,171,723	48353.8	0.90 0.18
Interference to BPCDT20130205AAM APP scenario 4							
Undesired	Total IX		Unique IX, before		Unique IX, after		
	WGEM-TV D19 DT APP	444.9	2,135	436.9	2,120	436.9	2,120
	KYIN D18 DT LIC	44.0	127	44.0	127	44.0	127
	KXNE-TV D19 DT LIC	249.6	1,230	229.4	1,190	229.4	1,190
	WMTV D19 DT LIC	24.1	946	24.1	946	16.1	931
	KETV D20 DT CP	24.2	40	4.0	0	4.0	0
Desired:							
Call	Chan	Svc	Status	City, State	File Number	Distance	
KOMI	D19	DT	APP	DES MOINES, IA	BPCDT20130205AAM		
Undesireds:	WGEM-TV	D19	DT	APP	QUINCY, IL	WGEM-TV CH. 19	283.6 km
	KYIN	D18	DT	LIC	MASON CITY, IA	BLEDT20090612AHJ	197.4
	KXNE-TV	D19	DT	LIC	NORFOLK, NE	BLEDT20090615ADS	305.8
	WMTV	D19	DT	LIC	MADISON, WI	BLCDT20100413AAM	384.7
	KETV	D20	DT	LIC	OMAHA, NE	BLCDT20041222AED	208.7
Service area							
49377.5	1,175,179	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
		49112.4	1,174,026	48794.7	1,171,723	48357.8	0.90 0.18
Interference to BMLCDT20080201APP LIC scenario 1							
Undesired	Total IX		Unique IX, before		Unique IX, after		
	WGEM-TV D19 DT APP	444.9	2,135	436.9	2,120	436.9	2,120
	KYIN D18 DT LIC	44.0	127	44.0	127	44.0	127
	KXNE-TV D19 DT LIC	249.6	1,230	241.5	1,210	241.5	1,210
	WMTV D19 DT LIC	24.1	946	24.1	946	16.1	931
	KETV D20 DT LIC	8.1	20	0.0	0	0.0	0
Desired:							
Call	Chan	Svc	Status	City, State	File Number	Distance	
WGN-TV	D19	DT	LIC	CHICAGO, IL	BMLCDT20080201APP		
Undesireds:	WGEM-TV	D19	DT	APP	QUINCY, IL	WGEM-TV CH. 19	377.1 km
	WIPB	D19	DT	LIC	MUNCIE, IN	BLANK0000087336	273.5
	WXMI	D19	DT	LIC	GRAND RAPIDS, MI	BLCDT20030117ABD	194.9
	WMTV	D19	DT	LIC	MADISON, WI	BLCDT20100413AAM	200.0
Service area							
33041.8	9,942,959	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
		33001.7	9,941,552	31093.3	9,828,400	31093.3	9,828,400
Interference to BLANK0000127570 CP scenario 1							
Undesired	Total IX		Unique IX, before		Unique IX, after		
	WGEM-TV D19 DT APP	4.0	19	0.0	0	0.0	0
	WIPB D19 DT LIC	116.8	1,907	15.9	269	15.9	269
	WXMI D19 DT LIC	559.4	34,029	262.1	8,679	258.0	8,660
	WMTV D19 DT LIC	1537.5	102,645	1333.1	78,854	1333.1	78,854
Desired:							
Call	Chan	Svc	Status	City, State	File Number	Distance	
WGN-TV	D19	DT	CP	CHICAGO, IL	BLANK0000127570		
Undesireds:	WGEM-TV	D19	DT	APP	QUINCY, IL	WGEM-TV CH. 19	377.1 km

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WIPB	D19	DT	LIC	MUNCIE, IN	BLANK0000087336	273.5
Undesireds:	WGEM-TV	D19	DT	LIC	GRAND RAPIDS, MI	BLCDT20030117ABD	194.9
	WMTV	D19	DT	LIC	MADISON, WI	BLCDT20100413AAM	200.0
Service area							
35053.8	10,032,442	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
		34977.5	10,029,928	32837.1	9,901,898	32837.1	9,901,898
Interference to BLANK0000116960 LIC scenario 1							
Undesired	Total IX		Unique IX, before		Unique IX, after		
	WGEM-TV D19 DT APP	16.1	97	0.0	0	0.0	0
	WIPB D19 DT LIC	137.1	1,597	32.0	435	32.0	435
	WXMI D19 DT LIC	615.1	22,094	233.8	7,616	233.8	7,616
	WMTV D19 DT LIC	1781.6	118,935	1493.3	105,501	1489.2	105,498
Desired:							
Call	Chan	Svc	Status	City, State	File Number	Distance	
WPSD-TV	D19	DT	LIC	PADUCAH, KY	BLANK0000116960		
Undesireds:	WGEM-TV	D19	DT	APP	QUINCY, IL	WGEM-TV CH. 19	368.4 km
	WHNT-TV	D19	DT	CP	HUNTSVILLE, AL	BLANK0000127591	350.6
	KYTV	D19	DT	LIC	SPRINGFIELD, MO	BLANK0000073156	350.6
	WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDTL20120328AJA	174.7
	KEFN-CD	D20z	DC	LIC	ST. LOUIS, MO	BLANK0000054925	186.5
Service area							
40913.2	883,814	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
		40439.6	879,213	40112.6	874,052	40077.0	873,714
Interference to BLANK0000116960 LIC scenario 2							
Undesired	Total IX		Unique IX, before		Unique IX, after		
	WGEM-TV D19 DT APP	59.4	537	35.6	338	35.6	338
	WHNT-TV D19 DT CP	151.7	3,042	151.7	3,042	151.7	3,042
	KYTV D19 DT LIC	171.2	1,878	171.2	1,878	147.4	1,679
	WTSN-CD D20 DC LIC	4.0	241	4.0	241	4.0	241
Desired:							
Call	Chan	Svc	Status	City, State	File Number	Distance	
WPSD-TV	D19	DT	LIC	PADUCAH, KY	BLANK0000116960		
Undesireds:	WGEM-TV	D19	DT	APP	QUINCY, IL	WGEM-TV CH. 19	368.4 km
	WHNT-TV	D19	DT	LIC	HUNTSVILLE, AL	BLCDT2011118C0Z	350.6
	KYTV	D19	DT	LIC	SPRINGFIELD, MO	BLANK0000073156	350.6
	WTSN-CD	D20	DC	LIC	EVANSVILLE, IN	BLDTL20120328AJA	174.7
	KEFN-CD	D20z	DC	LIC	ST. LOUIS, MO	BLANK0000054925	186.5
Service area							
40913.2	883,814	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
		40439.6	879,213	40144.6	874,312	40109.0	873,974
Interference to BLANK0000073156 LIC scenario 1							
Undesired	Total IX		Unique IX, before		Unique IX, after		
	WGEM-TV D19 DT APP	59.4	537	35.6	338	35.6	338
	WHNT-TV D19 DT LIC	119.8	2,782	119.8	2,782	119.8	2,782
	KYTV D19 DT LIC	171.2	1,878	171.2	1,878	147.4	1,679
	WTSN-CD D20 DC LIC	4.0	241	4.0	241	4.0	241
Desired:							
Call	Chan	Svc	Status	City, State	File Number	Distance	
KYTV	D19	DT	LIC	SPRINGFIELD, MO	BLANK0000073156		
Undesireds:	WGEM-TV	D19	DT	APP	QUINCY, IL	WGEM-TV CH. 19	338.9 km
	KFSM-TV	D18	DT	LIC	FORT SMITH, AR	BLCDT20060530AIM	184.6
	WPSD-TV	D19	DT	LIC	PADUCAH, KY	BLANK0000116960	350.6
	KNLJ	D20	DT	LIC	JEFFERSON CITY, MO	BLCDT2010121ACA	185.8
Service area							
50006.9	1,095,904	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
		49035.1	1,083,524	48592.8	1,076,572	48411.1	1,073,856

Undesireds: WSEC D18 DT CP JACKSONVILLE, IL BLANK0000129544 116.4 km
KOMI D19 DT LIC DES MOINES, IA BLCDDT20120627AAE 283.6
WGN-TV D19 DT LIC CHICAGO, IL BMLCDDT20080201APP 377.1
WPSD-TV D19 DT LIC PADUCAH, KY BLANK0000116960 368.4
KYTV D19 DT LIC SPRINGFIELD, MO BLANK0000073156 338.9
KEFN-CD D20z DC LIC ST. LOUIS, MO BLANK0000054925 187.3

Service area Terrain-limited IX-free
26741.8 310.818 26630.3 310.134 26310.6 308.566 1.20 0.51
Undesired
WSEC D18 DT CP 123.6 531 123.6 531 0.46 0.17
KOMI D19 DT LIC 156.4 980 152.4 964 0.57 0.31
WPSD-TV D19 DT LIC 11.9 7 11.9 7 0.04 0.00
KYTV D19 DT LIC 31.8 76 27.8 50 0.10 0.02

Interference to proposal scenario 3

Desired: WGEN-TV D19 DT APP QUINCY, IL File Number WGEN-TV CH. 19 Distance
Undesireds: WSEC D18 DT LIC JACKSONVILLE, IL BLANK0000117568 116.4 km
KOMI D19 DT APP DES MOINES, IA BPCDDT20130205AAM 283.6
WGN-TV D19 DT LIC CHICAGO, IL BMLCDDT20080201APP 377.1
WPSD-TV D19 DT LIC PADUCAH, KY BLANK0000116960 368.4
KYTV D19 DT LIC SPRINGFIELD, MO BLANK0000073156 338.9
KEFN-CD D20z DC LIC ST. LOUIS, MO BLANK0000054925 187.3

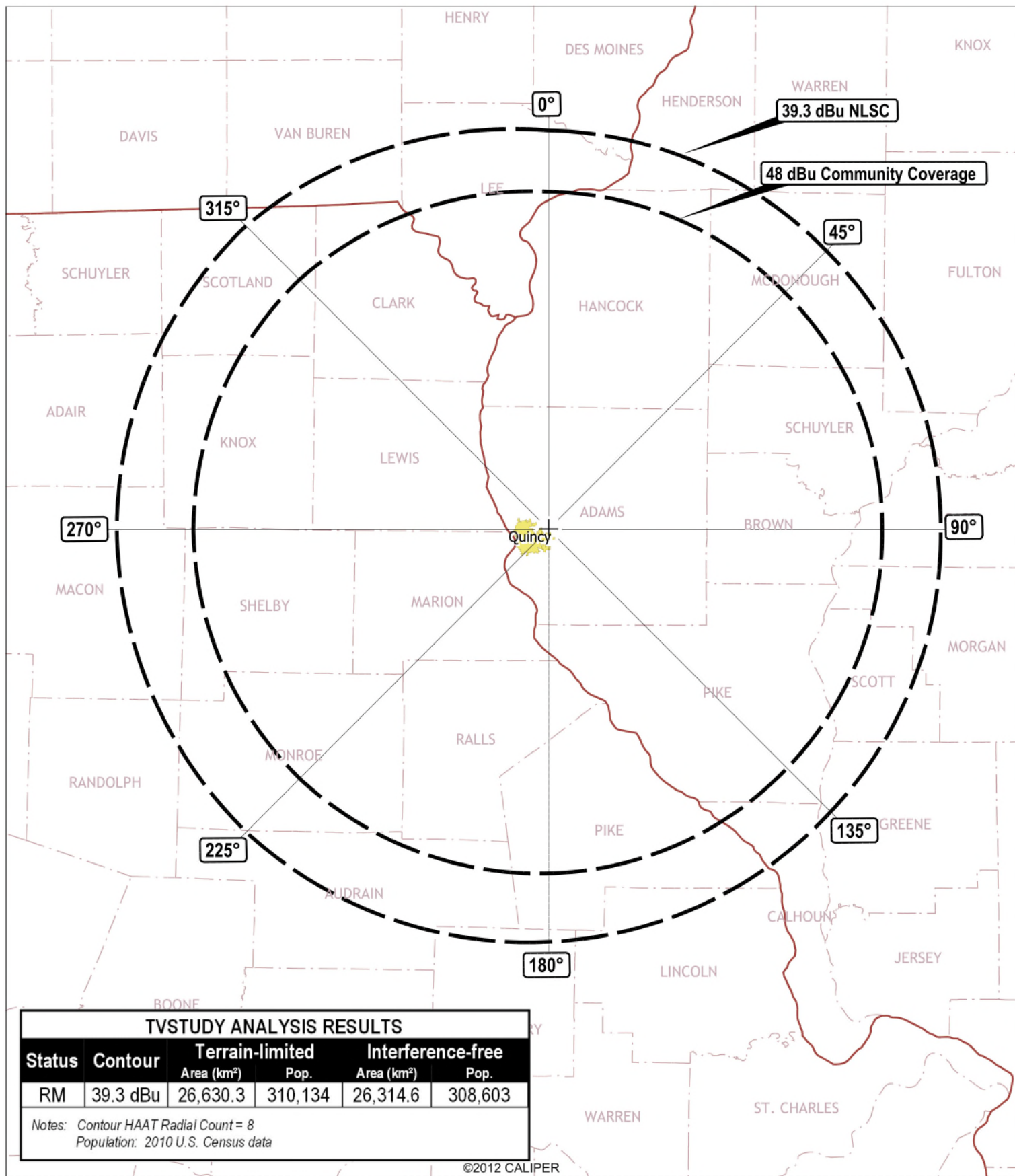
Service area Terrain-limited IX-free
26741.8 310.818 26630.3 310.134 26306.5 308.593 1.22 0.50
Undesired
WSEC D18 DT LIC 119.7 494 119.7 494 0.45 0.16
KOMI D19 DT APP 164.4 990 160.5 964 0.60 0.31
WPSD-TV D19 DT LIC 11.9 7 11.9 7 0.04 0.00
KYTV D19 DT LIC 31.8 76 27.8 50 0.10 0.02

Interference to proposal scenario 4

**MX: 0.51% interference received

Desired: WGEN-TV D19 DT APP QUINCY, IL File Number WGEN-TV CH. 19 Distance
Undesireds: WSEC D18 DT CP JACKSONVILLE, IL BLANK0000129544 116.4 km
KOMI D19 DT APP DES MOINES, IA BPCDDT20130205AAM 283.6
WGN-TV D19 DT LIC CHICAGO, IL BMLCDDT20080201APP 377.1
WPSD-TV D19 DT LIC PADUCAH, KY BLANK0000116960 368.4
KYTV D19 DT LIC SPRINGFIELD, MO BLANK0000073156 338.9
KEFN-CD D20z DC LIC ST. LOUIS, MO BLANK0000054925 187.3

Service area Terrain-limited IX-free
26741.8 310.818 26630.3 310.134 26302.5 308.556 1.23 0.51
Undesired
WSEC D18 DT CP 123.6 531 123.6 531 0.46 0.17
KOMI D19 DT APP 164.4 990 160.5 964 0.60 0.31
WPSD-TV D19 DT LIC 11.9 7 11.9 7 0.04 0.00
KYTV D19 DT LIC 31.8 76 27.8 50 0.10 0.02



CONTOUR PREDICTION METHOD

The contours were determined using the TVStudy default template, which for TV digital stations uses the F(50,90) FCC curve set, a contour HAAT radial count of 8, and the UHF dipole adjustment.

Present Ch.10
36 dBu NLSC

Proposed Ch.19
39.3 dBu NLSC

TVSTUDY - FIXED GEOGRAPHY STUDY AREA MODE RESULTS¹

Terrain-Limited Service² (2010 Census)

- Present Channel 10 Assignment: 404,391
- Total service lost due to the Proposed Ch. 19 Assignment: 0
- Amount of service lost in areas having fewer than five other services: 0

¹ Fixed Geography; Licensed Channel 10 NLSC, FCC File No. 0000105998

² OET-69 Analysis Settings: 2 km cell size; 1 km profile point spacing

CELLS INSIDE FIXED GEOGRAPHY (CH. 10 NLSC)

- **NO LOSS** - Cell receives Terrain-Limited Service from Ch. 19 (proposed).
- **LOSS** - Cell receives Terrain-Limited Service from Ch. 10 (present), but not Ch. 19 (proposed).

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Scale 1:1,200,000



FIGURE 3
LOSS AREA ANALYSIS
TERRAIN-LIMITED METHODOLOGY
WGEM-TV QUINCY, ILLINOIS
CH. 19 1,000 KW 238 M

March 2021