TECHNICAL STATEMENT
IN SUPPORT OF THE CERTIFICATIONS CONCERNING THE BROADCAST AUXILIARY FACILITY AND ENVIRONMENTAL EFFECT
WXOW 99 kW ERP 334.5 M HAAT CH. 28
LA CROSSE, WISCONSIN

INTRODUCTION

WXOW-WQOW License, LLC (the, "Applicant"), licensee of digital television station WXOW, Facility ID No. 64549, request authority to operate an auxiliary antenna on Channel 28 as a back-up for WXOW's main antenna.[1] The specified auxiliary antenna is broadband and during the post-incentive auction process it was used for transmitting WXOW's signal under special temporary authorization.[2] It was subsequently repurposed to transmit the signal of digital low power television station W34FC-DA, which is a co-owned facility. The Applicant now intends to utilize the existing broadband antenna for the dual purpose of transmitting W34FC-D's signal and serving as a permanent back-up for WXOW. The operating parameters proposed for WXOW are described in detail below.

This application for construction permit is eligible for processing under the normal procedures for seeking authority to utilize a new auxiliary antenna.[3] 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.

[1] WXOW's licensed main facility is currently authorized in FCC File No. 0000058613 to operate a directional antenna system with a maximum ERP of 251 kW at a radiation center height above mean sea level (AMSL) of 616.8 meters. The antenna location coordinates are 43-48-23.0 N, 91-22-03.0 W (Antenna Structure Registration Number 1035149).

[2] See Engineering STA FCC File No. 0000054441.

[3] 47 CFR § 73.1675(b) states that an application for a construction permit to install a new auxiliary antenna must be filed on FCC Form 301.

BROADCAST AUXILIARY FACILITY

As stated above, this application proposes a new auxiliary antenna for WXOW, which is authorized to transmit on Channel 28. The type of antenna to be employed is a horizontally polarized directional Dielectric Model TFU-8WB-1-R C160 with 1.05 degrees electrical beam tilt. This auxiliary antenna will operate with a maximum effective radiated power (ERP) of 99 kW. The height of the antenna radiation center will be 229.4 meters above ground level (AGL) or 603.0 meters above mean sea level (AMSL). The resulting height above average terrain (HAAT) will be 334.5 meters.[4] Because the technical parameters for the proposed auxiliary antenna are less than the associated main facility authorization, the noise-limited service contour of the main facility will not be exceeded in any direction by the corresponding service contour of the auxiliary antenna as depicted in Figure 1.[5] Accordingly, this application complies with the coverage limits in 47 C.F.R. Section 73.1675(a).

A copy of the *TVStudy* analysis summary is provided in Figure 2. This summary indicates that the proposal is not predicted to cause new interference beyond the normal tolerance to any other post-auction full-service or Class A TV stations. This analysis was performed using the following permissible OET-69 settings:

Study cell size:	2.0 kilometer
Profile point spacing:	1.0 kilometer

ENVIRONMENTAL EFFECT

This application specifies an existing FCC registered tower that was constructed before March 16, 2001. Given that no new antennas will be added to the existing tower structure, the criteria outlined in 47 CFR § 1.1307(a) for certain types of facilities that may

[4] The antenna HAAT was calculated using the TVStudy software, v2.2.5.

[5] The Commission treats a digital station's noise-limited service contour as the functional equivalent of an analog station's Grade B contour. *See Report To Congress: The Satellite Home Viewer Extension and Reauthorization Act of 2004; Study of Digital Television Field Strength Standards and Testing Procedures*, 20 FCC Rcd 19504, 19507 ¶ 3 (2005).

significantly affect the environment do not apply. With regard to the rules for limiting human exposure to radio-frequency (RF) energy in 47 CFR § 1.1307(b), this application seeks authority to operate a television broadcast antenna in full compliance with the maximum permissible exposure (MPE) limits as described in more detail below. The following technical parameters are proposed for WXOW:

Frequency:	554 - 560 MHz (UHF Channel 28)
Antenna Type:	TFU-8WB-1-R C160
Antenna Polarization:	Horizontal
Antenna Rotation:	70 degrees
Effective Radiated Power:	99 kW (H)
Location coordinates:	43-48-23.0 N, 91-22-03.0 W (NAD83)
Site elevation:	373.6 meters AMSL
Antenna Height:	229.4 meters AGL
Overall tower height:	249.7 meters AGL
FCC ASRN:	1035149

Using the methodology for predicting power density levels for television broadcast antennas outlined in *FCC OET Bulletin No. 65, Edition 97-01,* (OET-65), the proposed facility is calculated to produce a maximum power density of 2.56 μW/cm² at points 2 meters above ground (approximate human head height).[6] This exposure level was determined using 20 percent antenna relative field, which is an appropriate value for the type of UHF antenna to be used. The maximum exposure limits applicable to Channel 28, as determined in accordance with 47 CFR § 1.1310 for uncontrolled and controlled situations, are 369 μW/cm² and 1,847 μW/cm² respectively. Because the maximum exposure prediction for WXOW is not more than 5% of those guidelines, the station is not expected to be a significant contributor at any ground-level locations. Therefore, this application complies with the RF exposure limits and is categorically excluded from environmental processing by 47 CFR § 1.1306.

The tower location is fenced and the Applicant will ensure that suitable warning signs to establish awareness of the potential for exposure are posted. Steps to limit exposure to persons authorized to access the transmitter site will be consistent with the appropriate

[6] See OET-65, Equation 10.

recommendations in OET-65. All maintenance and other related work to be performed at elevations higher than 2 meters above ground will be coordinated to prevent exposure to RF fields in excess of the controlled limit. Such preventative steps shall include reducing power or shutting down the facility.

Respectfully submitted,

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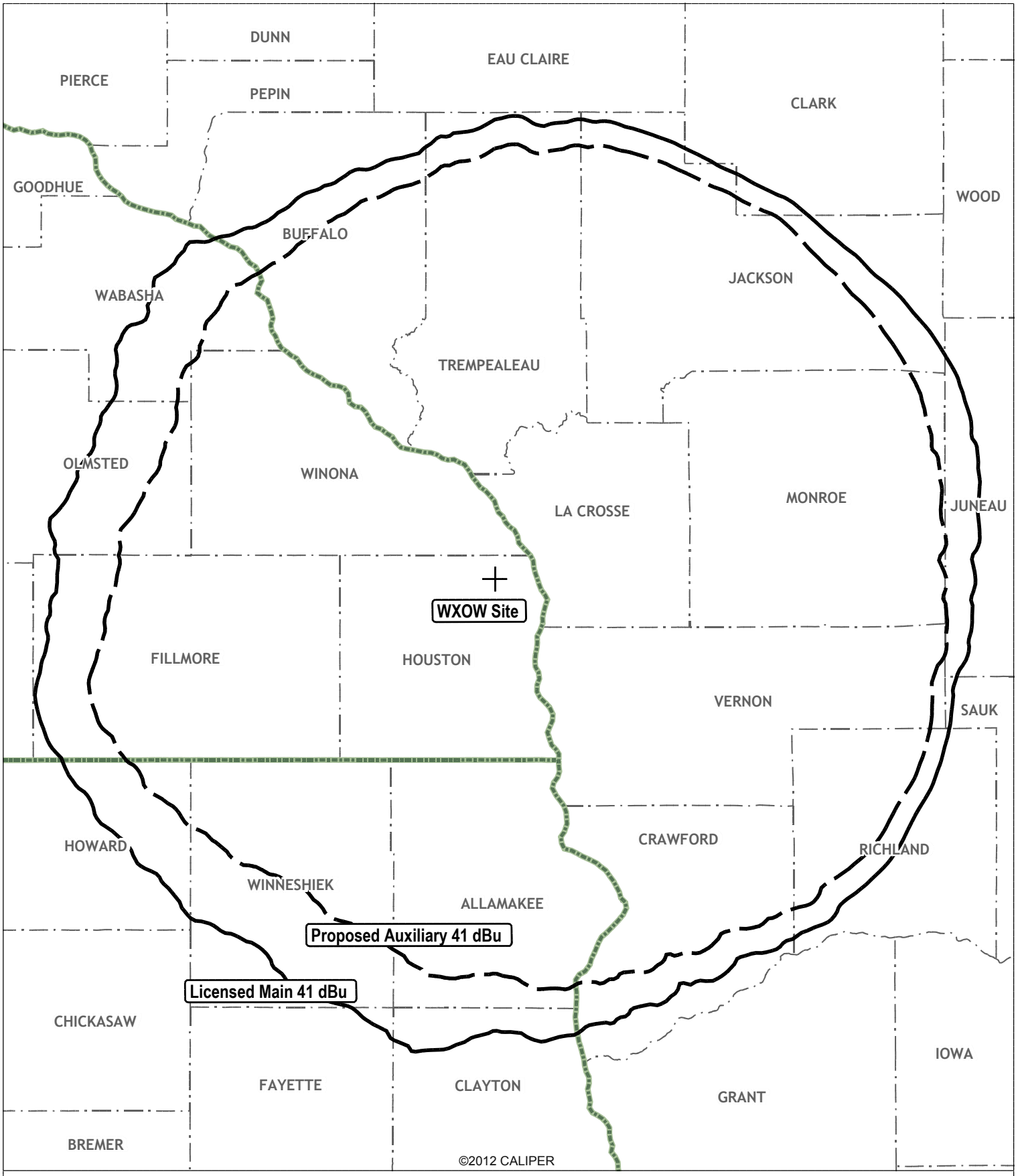
January 29, 2021

Attachments:
Figure 1 – Main & Auxiliary Service Contours
Figure 2 – Summary of TV Study Results



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SCALE 1:1,000,000

10 0 10 20 30 40
Kilometers

FIGURE 1
DTV SERVICE CONTOURS
WXOW MAIN AND AUXILIARY FACILITIES
LICENSED MAIN 251 KW-DA 348.0 M HAAT
PROPOSED AUX. 99 KW-DA 334.5 M HAAT
CHANNEL 28 LA CROSSE, WISCONSIN

January 2021

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FIGURE 2
Interference Analysis Summary
TVSTUDY, VERSION 2.2.5.

Study created: 2021.01.26 13:57:49

Study build station data: LMS TV 2021-01-26

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    Proposal: WXOW D28 DX APP LA CROSSE, WI
 File number: WXOW NEW-AUX
 Facility ID: 64549
Station data: User record
   Record ID: 658
     Country: U.S.
        Zone: II
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Search options:
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KFXA	D27	DT	LIC	CEDAR RAPIDS, IA	BLCDT20050713ABD	199.5 km
Yes	WHWC-TV	D27	DT	CP	MENOMONIE, WI	BLANK0000035676	143.4
Yes	WHWC-TV	D27	DT	LIC	MENOMONIE, WI	BLEDT20040824AAF	143.4
No	WBXF-CD	D28z	DC	CP	DES MOINES, IA	BLANK0000035778	308.0
No	WBXF-CD	D28z	DC	LIC	DES MOINES, IA	BLANK0000005069	308.0
No	KSIN-TV	D28	DT	LIC	SIOUX CITY, IA	BLEDT20050726AMC	425.2
No	WEDE-CD	D28	DC	LIC	ARLINGTON HEIGHTS, IL	BLANK0000112254	371.9
No	WYZZ-TV	D28	DT	LIC	BLOOMINGTON, IL	BLCDT20060609ABE	394.7
No	KAWB	D28	DT	LIC	BRAINERD, MN	BLEDT20101012ADI	378.7
Yes	WYOW	D28	DT	LIC	EAGLE RIVER, WI	BLCDT20121005AAF	275.3
Yes	WYOW	D28	DT	APP	EAGLE RIVER, WI	BPCDT20121019AAE	275.3
Yes	WISN-TV	D28	DT	LIC	MILWAUKEE, WI	BLANK0000089554	288.0
Yes	KGAN	D29	DT	LIC	CEDAR RAPIDS, IA	BLCDT20140416AAI	170.3
No	WFTC	D29	DT	LIC	MINNEAPOLIS, MN	BLCDT20100809CJF	197.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

```
    Channel: D28
   Latitude:  43 48 23.00 N (NAD83)
  Longitude:  91 22  3.00 W
Height AMSL: 603.0 m
       HAAT: 334.5 m
   Peak ERP: 99.0 kW
    Antenna: DIE TFU-8WB C160H 70.0 deg
Elev Pattrn: Generic
  Elec Tilt: 1.05
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40.1 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	83.8 kW	337.8 m	82.3 km
45.0	97.5	375.6	86.9
90.0	96.6	369.6	86.4
135.0	87.2	384.9	86.8
180.0	50.3	296.3	75.2
225.0	24.0	322.6	73.1
270.0	27.9	300.7	72.3
315.0	43.3	288.5	73.8

Distance to Canadian border: 471.2 km

Distance to Mexican border: 1794.4 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 105.1 degrees Distance: 458.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 255.2 degrees Distance: 1213.1 km

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%

---- Below is IX received by proposal WXOW NEW-AUX ----

Proposal receives 0.68% interference from scenario 1
**MX with BPCDT20121019AAE APP scenario 2, 0.68% interference received
Proposal receives 0.68% interference from scenario 3
**MX with BPCDT20121019AAE APP scenario 4, 0.68% interference received