

## Comprehensive Technical Statement

American Education Foundation, Inc.  
W225DC, FCC Facility ID # 203244, Peoria, IL  
Application for Minor Change

### Introduction

The following changes are proposed:

- Transmitter Location
- Effective Radiated Power
- Antenna make, model, and height

### Data Sources

Distances were calculated using the FCC method defined in §73.208 of the Commission's Rules.

All contours shown in this report were generated using antenna center above mean sea level, NAD-83 coordinates, and the USGS03 terrain dataset

Dates shown on the maps represent the last change date in the LMS downloads in use at the time this statement was prepared.

### Detailed Interference Study

The following collection of maps and the narrative accompanying each show that no prohibited overlap will occur between the proposed facility and any potentially conflicting facility or proposal. Interfering f(50,10) contours are shown as red polygons, and protected f(50,50) contours are shown as black polygons.

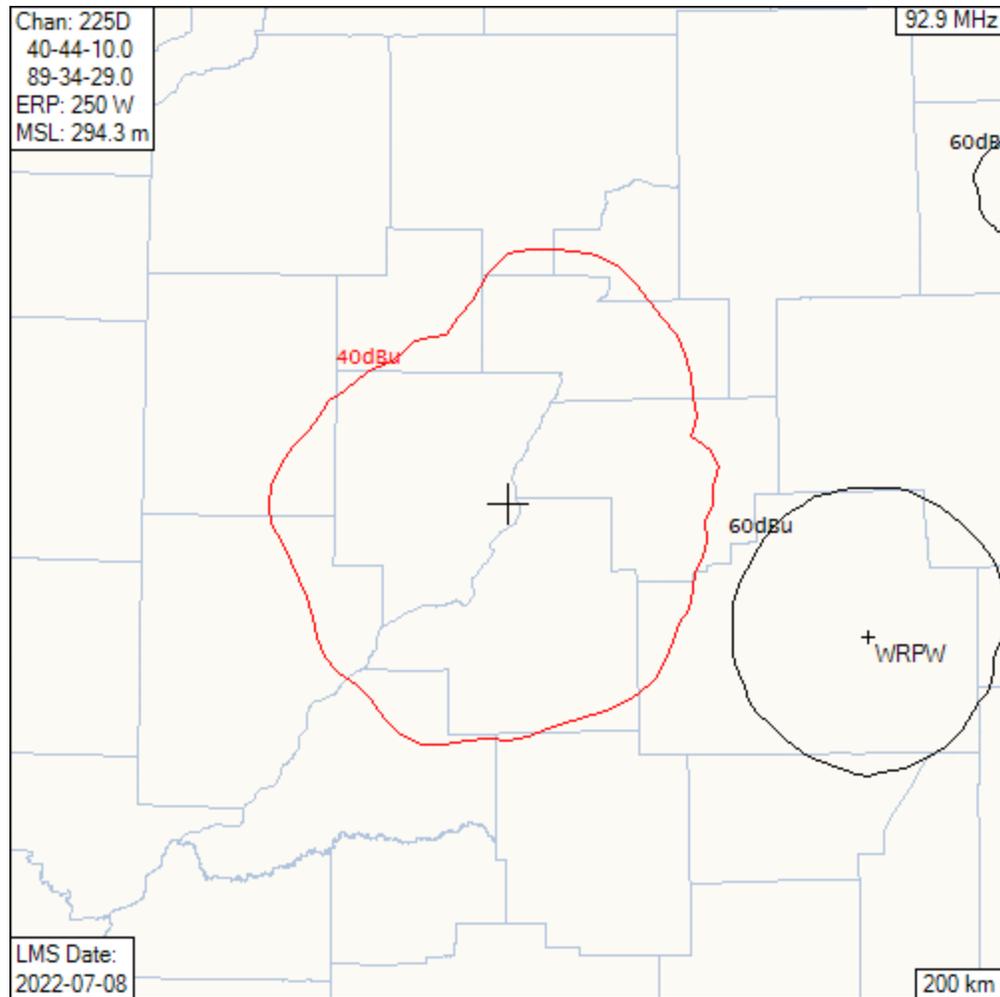
---

Skywaves LLC

PO Box 11382, Bainbridge Island, WA 98110

401-354-2400

## Map 1 – Co-channel Outbound Interference



There is no overlap of the interfering contour with the protected contour of any co-channel station or proposal.

---

**Skywaves LLC**

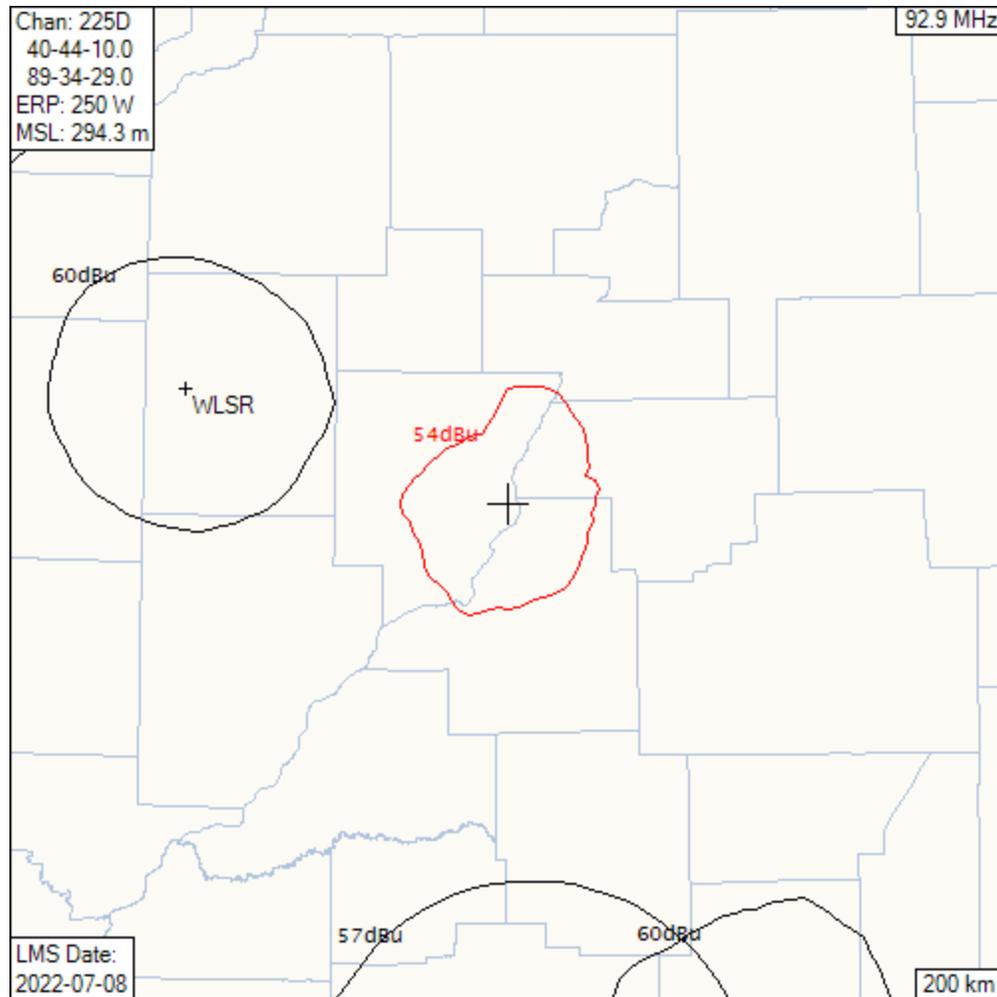
PO Box 11382, Bainbridge Island, WA 98110

401-354-2400

<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)  
Copyright © 2022, Skywaves LLC.

## Map 2 – First Adjacent Outbound Interference



There is no overlap of the interfering contour with the protected contour of any first-adjacent station or proposal.

---

**Skywaves LLC**

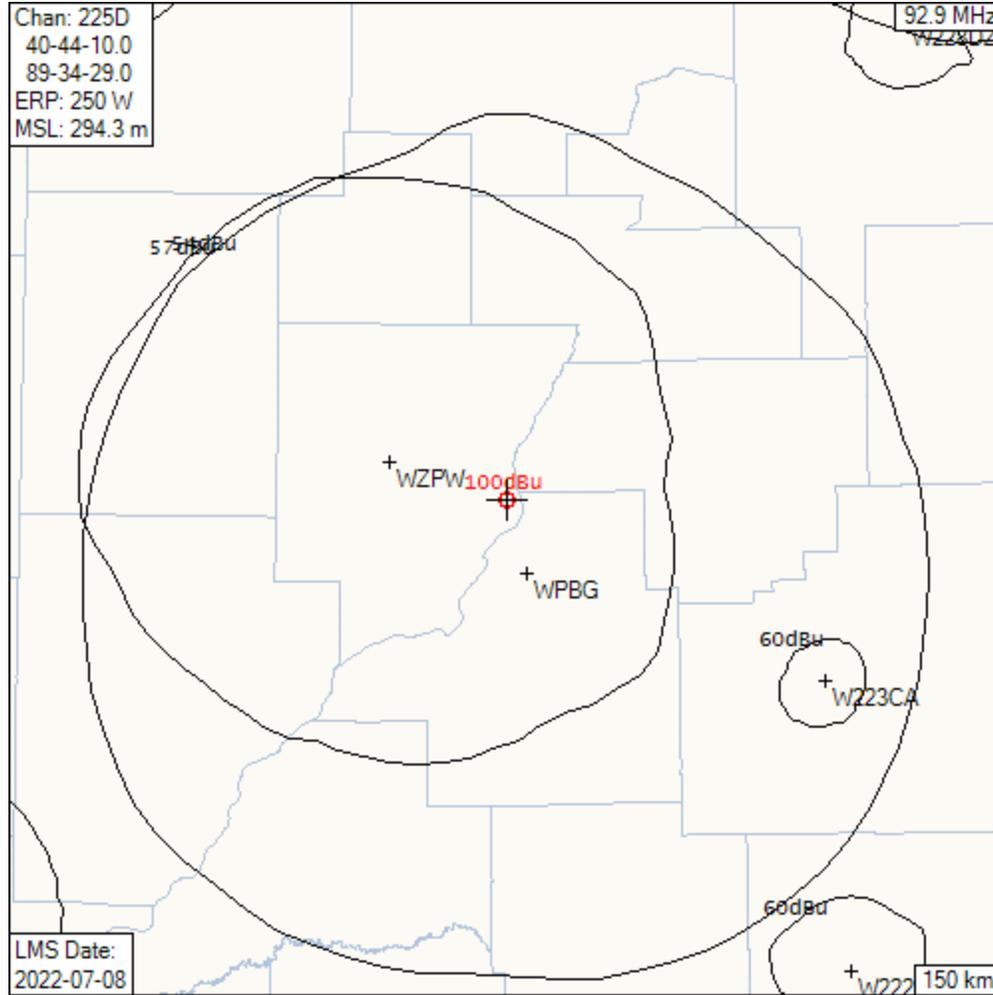
PO Box 11382, Bainbridge Island, WA 98110

401-354-2400

<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)  
Copyright © 2022, Skywaves LLC.

### Map 3 – Second/Third Adjacent Outbound Interference Detail



The proposed site is within the protected contours of second-adjacent WPBG and third-adjacent WZPW.

The f(50,50) signal at the site from WPBG is 89.13 dBu, and the f(50,50) signal at the site from WZPW is 74.16 dBu.

Since the WZPW signal is lower, it is the more critical. The interfering free-space signal level is 114.16 dBu.

---

#### Skywaves LLC

PO Box 11382, Bainbridge Island, WA 98110

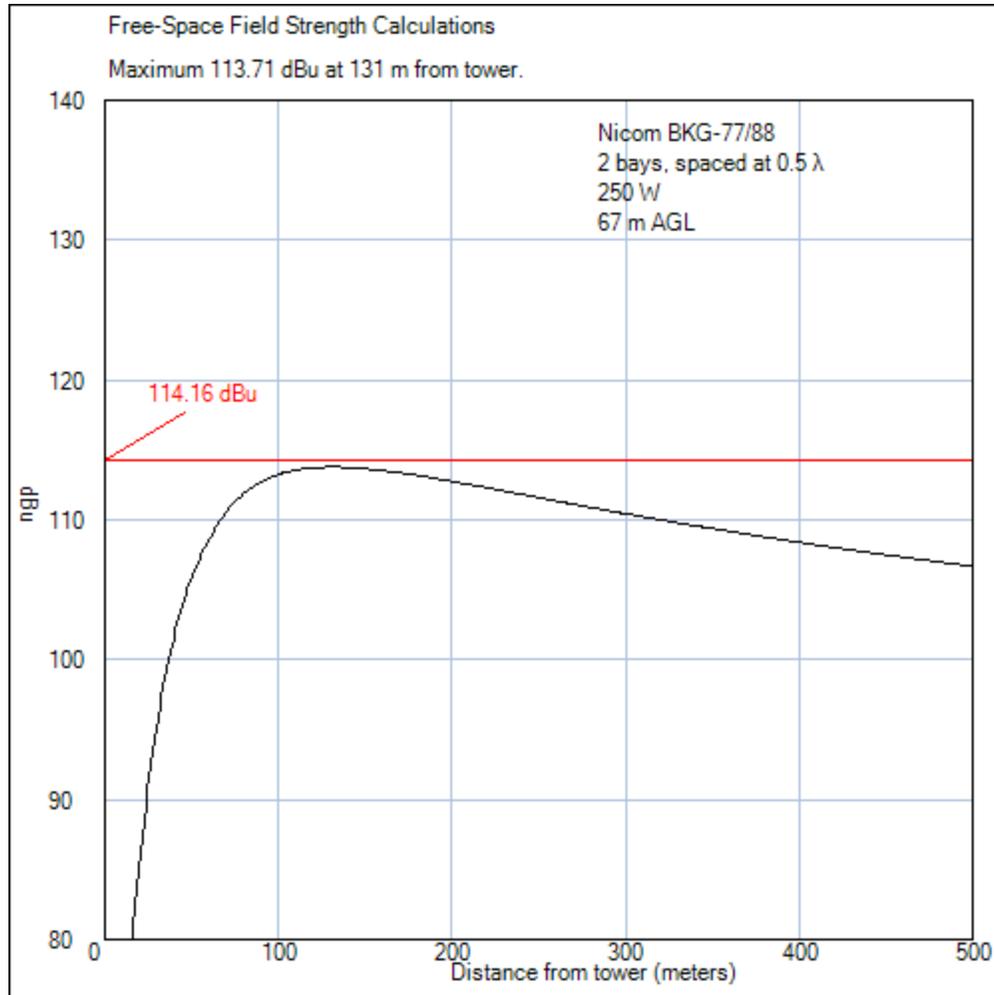
401-354-2400

<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)

Copyright © 2022, Skywaves LLC.

The proposed antenna is a Nicom BKG-77, with two bays spaced at 0.5 wavelength:



The maximum signal is 113.71 dBu, 0.45 dB lower than the maximum permitted on the ground.

---

Skywaves LLC

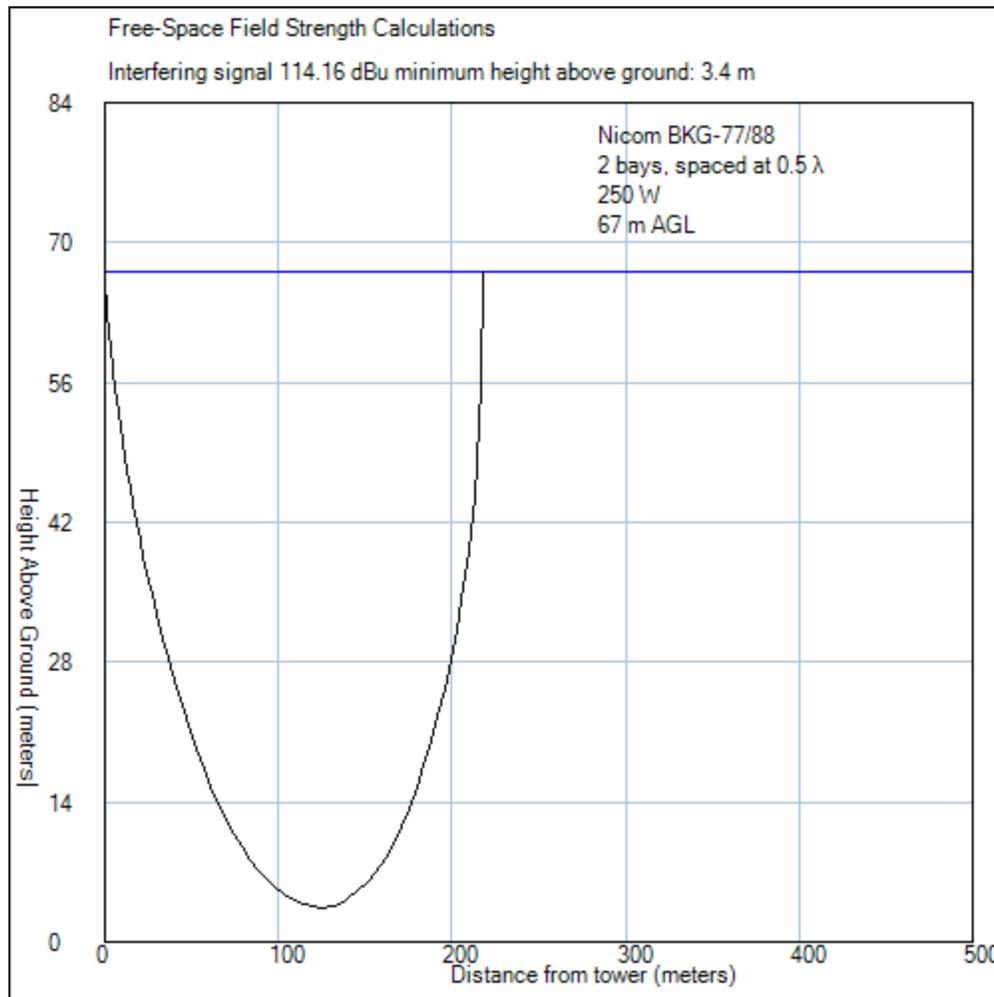
PO Box 11382, Bainbridge Island, WA 98110

401-354-2400

<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)

Copyright © 2022, Skywaves LLC.



Viewed another way, the interfering signal is everywhere at least 3.4 m above the ground. There are no tall buildings in the vicinity.

Therefore, the proposal meets the requirements of §74.1204(d).

---

Skywaves LLC

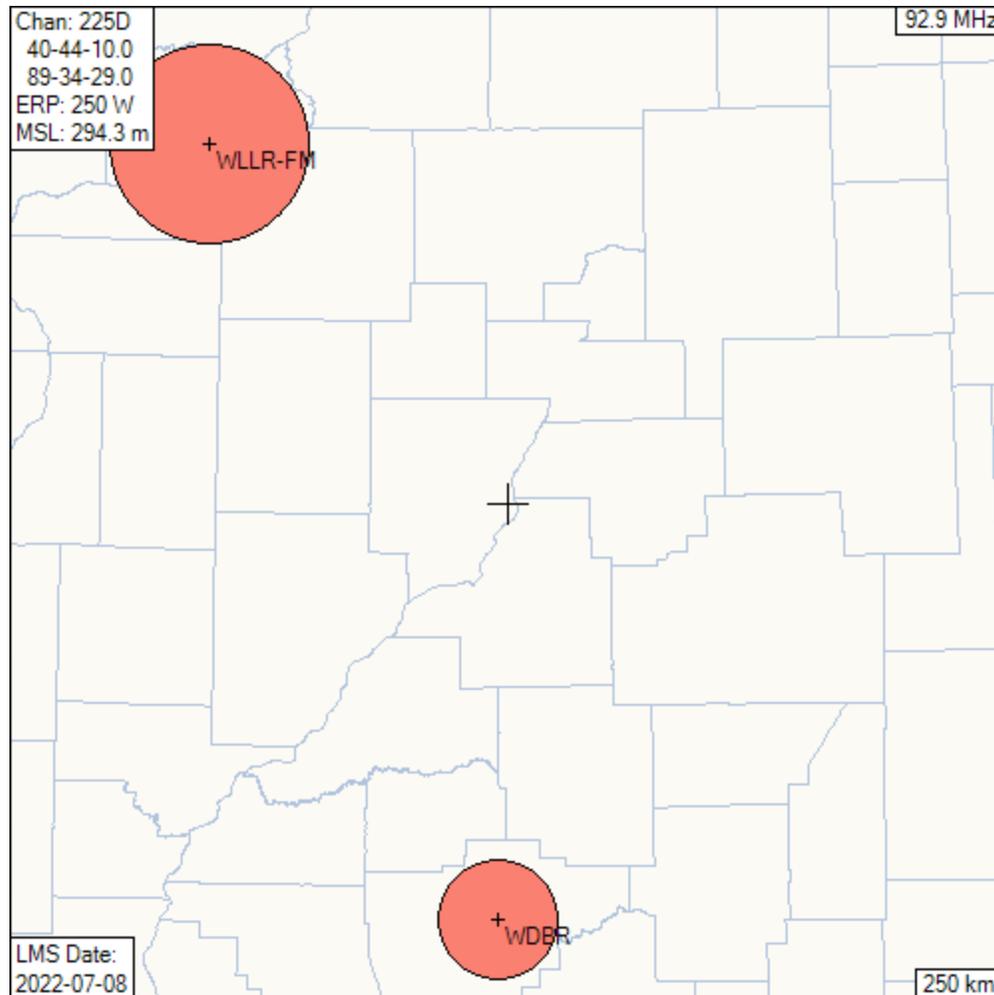
PO Box 11382, Bainbridge Island, WA 98110

401-354-2400

<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)  
Copyright © 2022, Skywaves LLC.

## IF Separation requirements



There are no nearby IF-separated full-service stations.

## Channel 6 Interference

The proposed facility is not on a channel that is implicated in channel 6 interference.

---

**Skywaves LLC**

PO Box 11382, Bainbridge Island, WA 98110

401-354-2400

<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)  
Copyright © 2022, Skywaves LLC.

## **International**

The FM Agreements with Canada and Mexico require evaluation and potential coordination of any proposal within 320 km of the border.

The distance to the nearest point along the US/Canada border is 555 km. Coordination with Canada is not required.

The distance to the nearest point along the US/Mexico border is 1,621 km. Coordination with Mexico is not required.

## **Quiet Zones**

The proposed site is outside the National Radio Quiet Zone (National Radio Astronomy Observatory Notification Area) in West Virginia.

The proposed site is outside the Arecibo Observatory notification area in Puerto Rico.

The proposed site is not within a 100 km extension of the Table Mountain Radio Receiving Zone in Colorado.

## **Protected Monitoring Stations**

The nearest Protected Monitoring Station is 365 km distant, in Allegan, MI. This is well beyond any potential 80 dBu contour.

---

**Skywaves LLC**

PO Box 11382, Bainbridge Island, WA 98110

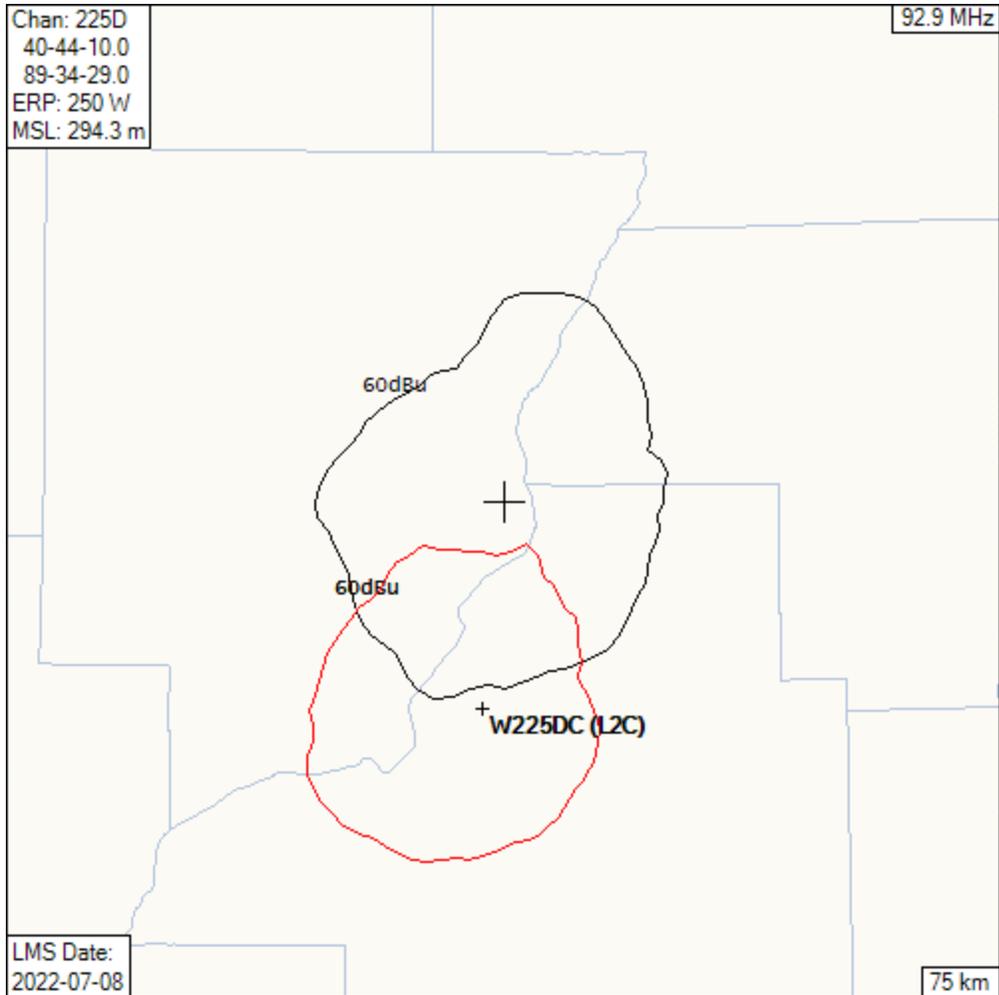
401-354-2400

<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)

Copyright © 2022, Skywaves LLC.

## Minor Change



The present 60 dBu f(50,50) contour is shown as a red polygon. The proposed 60 dBu f(50,50) contour is shown as a black polygon.

The polygons intersect, indicating contour overlap. No change in frequency is proposed.

Therefore, the proposal is for a minor change.

---

### Skywaves LLC

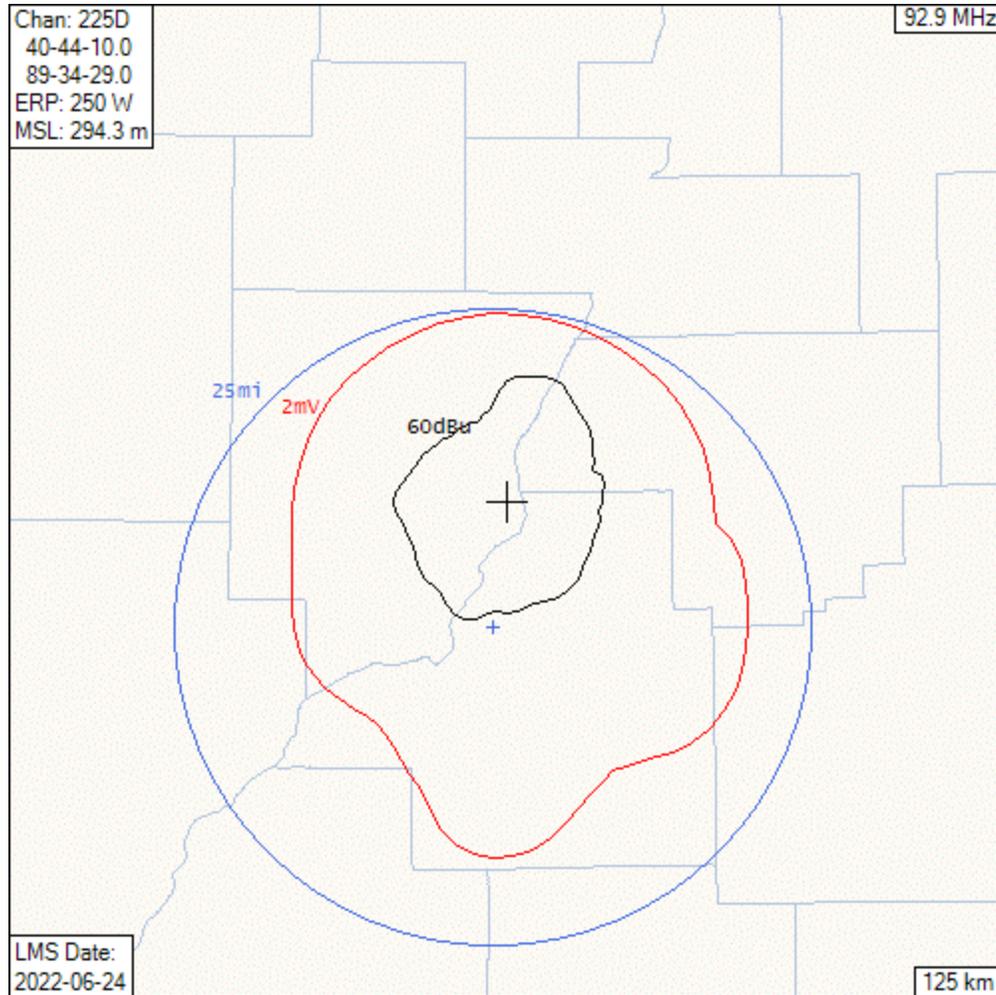
PO Box 11382, Bainbridge Island, WA 98110

401-354-2400

<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)  
Copyright © 2022, Skywaves LLC.

## Fill-In Translator



The proposed primary station is WOAM, FCC Facility ID # 33878, Peoria, IL.

The proposed 60 dBu f(50,50) contour is shown as a black polygon. The WOAM 2 mV/m contour is shown as a red polygon. The 25 mile circle around the WOAM transmitter is shown in blue.

The proposed 60 dBu f(50,50) contour falls entirely within the 25 mile circle and the 2 mV/m contour. The translator is commonly owned with the primary station. The proposal therefore qualifies as fill-in service.

---

**Skywaves LLC**

PO Box 11382, Bainbridge Island, WA 98110

401-354-2400

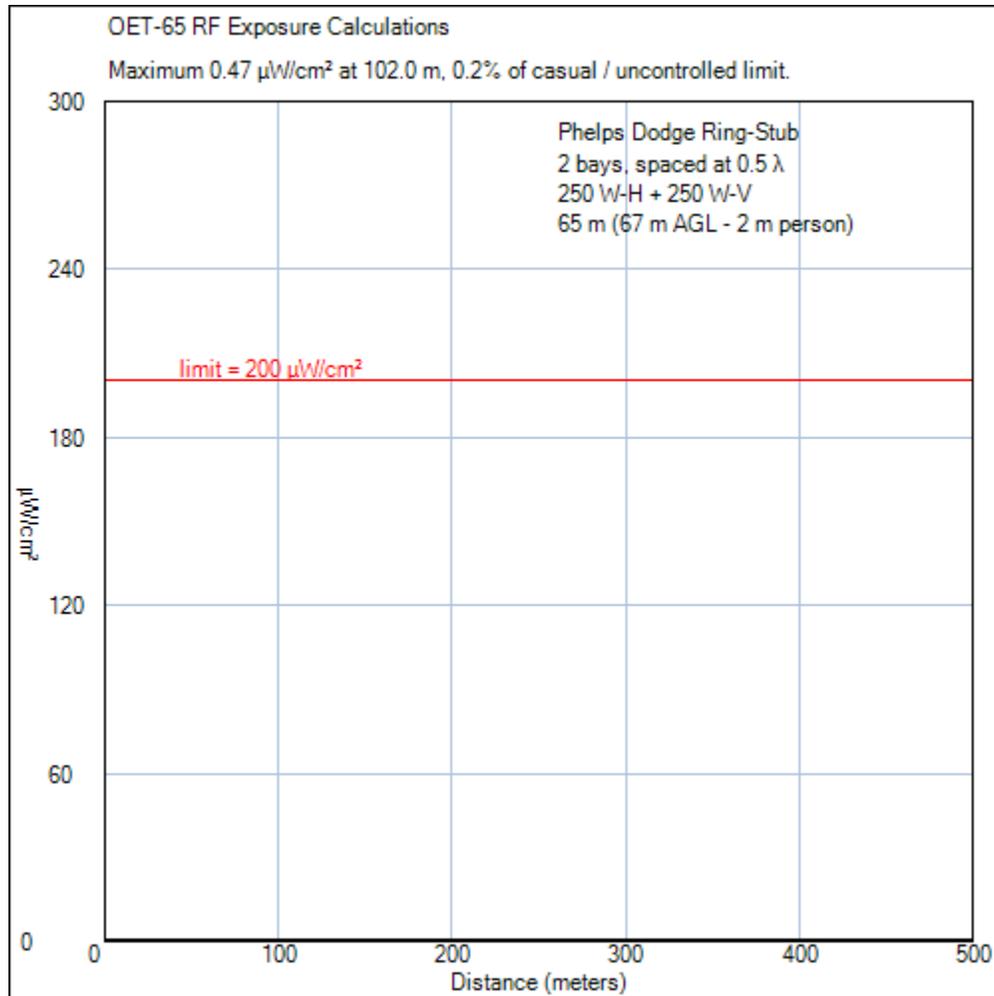
<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)  
Copyright © 2022, Skywaves LLC.

## Environmental

The proposed site is an existing tower, ASR # 1008678. No construction, excavation, or increase to the height of the tower is proposed.

The proposed effective radiated power is 250 W-H + 250 W-V. The 2-bay antenna will be mounted 67 m above ground level. Assuming the worst-case OET Type 1 antenna model, the OET-65 algorithm returns a maximum exposure of less than 1% of the limit for casual / uncontrolled exposure:



---

Skywaves LLC

PO Box 11382, Bainbridge Island, WA 98110

401-354-2400

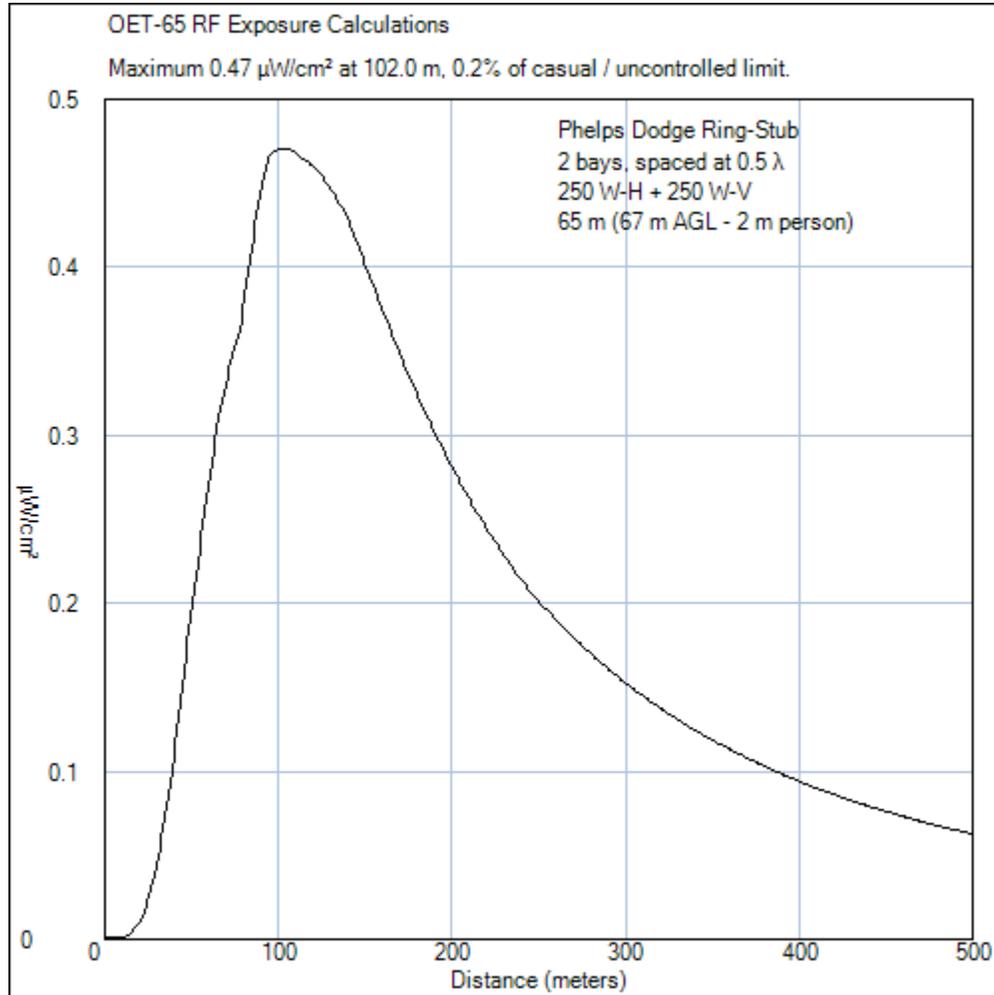
<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)

Copyright © 2022, Skywaves LLC.

Because the exposure level is so low, it does not appear above the baseline when the 200  $\mu\text{W}/\text{cm}^2$  limit is included.

Therefore, the following auto-scaled graph is included showing the location of the peak exposure:



Appropriate access controls and safety signage are provided. The applicant agrees to coordinate with other users of the site to reduce power or shut down in order to protect workers at the site.

---

Skywaves LLC

PO Box 11382, Bainbridge Island, WA 98110

401-354-2400

<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)

Copyright © 2022, Skywaves LLC.

## LMS Engineering Data

Service Type	FM Translator	
Facility ID	203244	
State	Illinois	
City	Peoria	
FX Channel	225	
Facility Type	Commercial	
Station Type	Main	
Primary Station	Facility ID	33878
	Call Sign	WOAM
	City, State	Peoria, IL
ASR	1008678	
Coordinates (NAD-83)	40 44 10.0 N Lat	
	89 34 29.0 W Lon	
Structure Type	GTOWER	
Overall Height AGL	78.6 m	
Support Height AGL	78.6 m	
Site Elevation AMSL	227.3 m	
Radiation Center AGL	67.0 m	
Radiation Center AMSL	294.3 m	
Effective Radiated Power	0.25kW	
Antenna type	Non-Directional	
Antenna ID	None	
Antenna		
Manufacturer	Nicom	
Model	BKG-77	
# Sections	2	
Section spacing	0.5	

-0-

---

### Skywaves LLC

PO Box 11382, Bainbridge Island, WA 98110

401-354-2400

<http://www.skywaves.com>

[consultants@skywaves.com](mailto:consultants@skywaves.com)

Copyright © 2022, Skywaves LLC.