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**Proposed Translator  
Channel 241D at Altoona, PA  
To Rebroadcast WKMC(AM) 1370 kHz Roaring Spring, PA  
December 2017**

**Allocation Study**

The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204 of the Rules. The attached allocation study maps demonstrate compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204.

The attached spacing study demonstrates compliance with §73.207 of the Commission's Rules regarding spacing restrictions to stations which are 53 or 54 channels removed from the proposed operation.

***WFGI-FM 238B Johnstown***

The proposed translator transmitter site is located within the 60 dBu protected contour of third-adjacent channel station WFGI-FM 238B Johnstown. The following calculation, performed using the *Living Way* methodology, demonstrates interference protection to that station.

| Protected Station | Distance & Bearing to Proposal | Station ERP and HAAT on that azimuth | Station Field Strength at Proposal | Corresponding Translator Interfering Contour | Distance to Translator Interfering Contour |
|-------------------|--------------------------------|--------------------------------------|------------------------------------|--|--|
| WFGI-FM 238B      | 38.89 km<br>85 deg True        | 57 kW<br>334 meters                  | 74.3 dBu<br>F(50,50)               | 114.3 dBu                                    | 160 meters<br>Free Space                   |

The attached map of the proposed transmitter site depicts the 114.29 dBu contour from the proposed facility as a circle with a radius of 160 meters. There is no population within this contour. Therefore, the proposed facility is believed to satisfy the requirements of §74.1204(d) with respect to WFGI-FM.

### ***WKYE 243B Johnstown***

The proposed translator transmitter site is located within the 60 dBu protected contour of second-adjacent channel station WKYE 243B Johnstown. The following calculation, performed using the *Living Way* methodology, demonstrates interference protection to that station.

| Protected Station | Distance & Bearing to Proposal | Station ERP and HAAT on that azimuth | Station Field Strength at Proposal | Corresponding Translator Interfering Contour | Distance to Translator Interfering Contour |
|-------------------|--------------------------------|--------------------------------------|------------------------------------|--|--|
| WKYE 243B         | 32.64 km<br>76 deg True        | 50 kW<br>125 meters                  | 68.4 dBu<br>F(50,50)               | 108.4 dBu                                    | 315 meters<br>Free Space                   |

The attached map of the proposed transmitter site depicts the 108.4 dBu contour from the proposed facility as a circle with a radius of 315 meters. There is no population within this contour. Therefore, the proposed facility is believed to satisfy the requirements of §74.1204(d) with respect to WKYE.

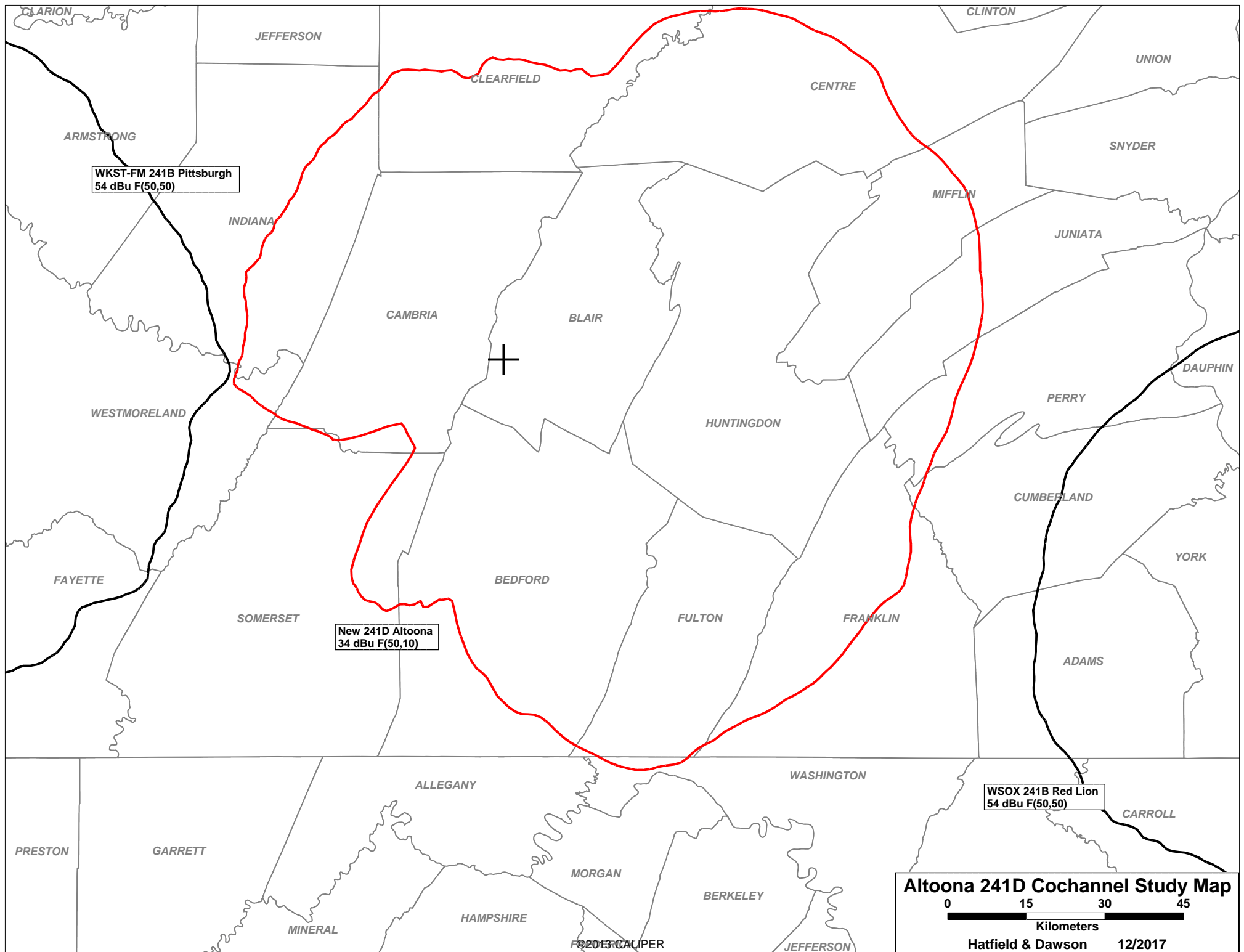
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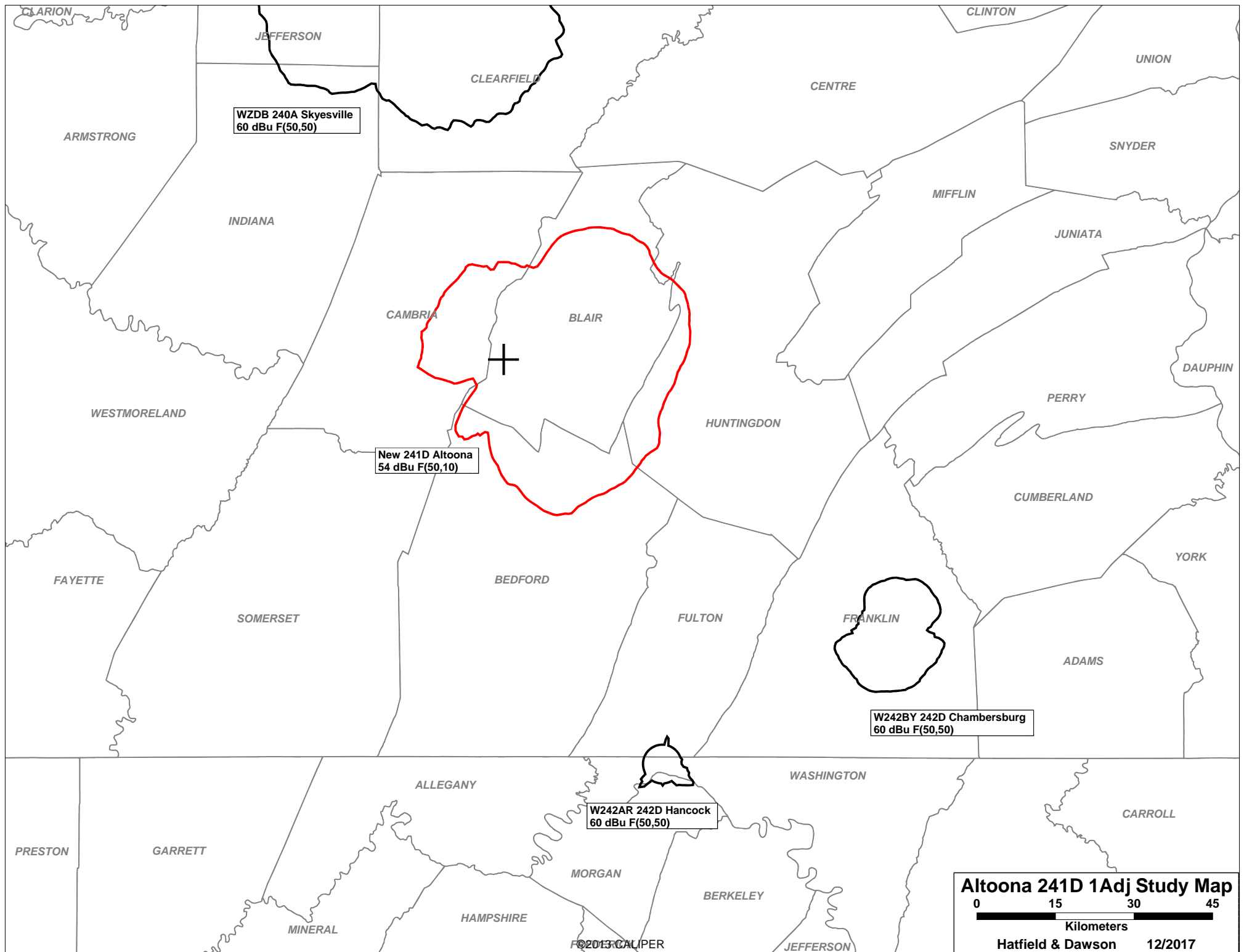
=====
SEARCH PARAMETERS                      FM Database Date: 171207
Channel: 241A      96.1 MHz                      Page 1
Latitude:  40 24 11
Longitude:  78 31 35
Safety Zone:  50 km
Job Title: ALTOONA 241
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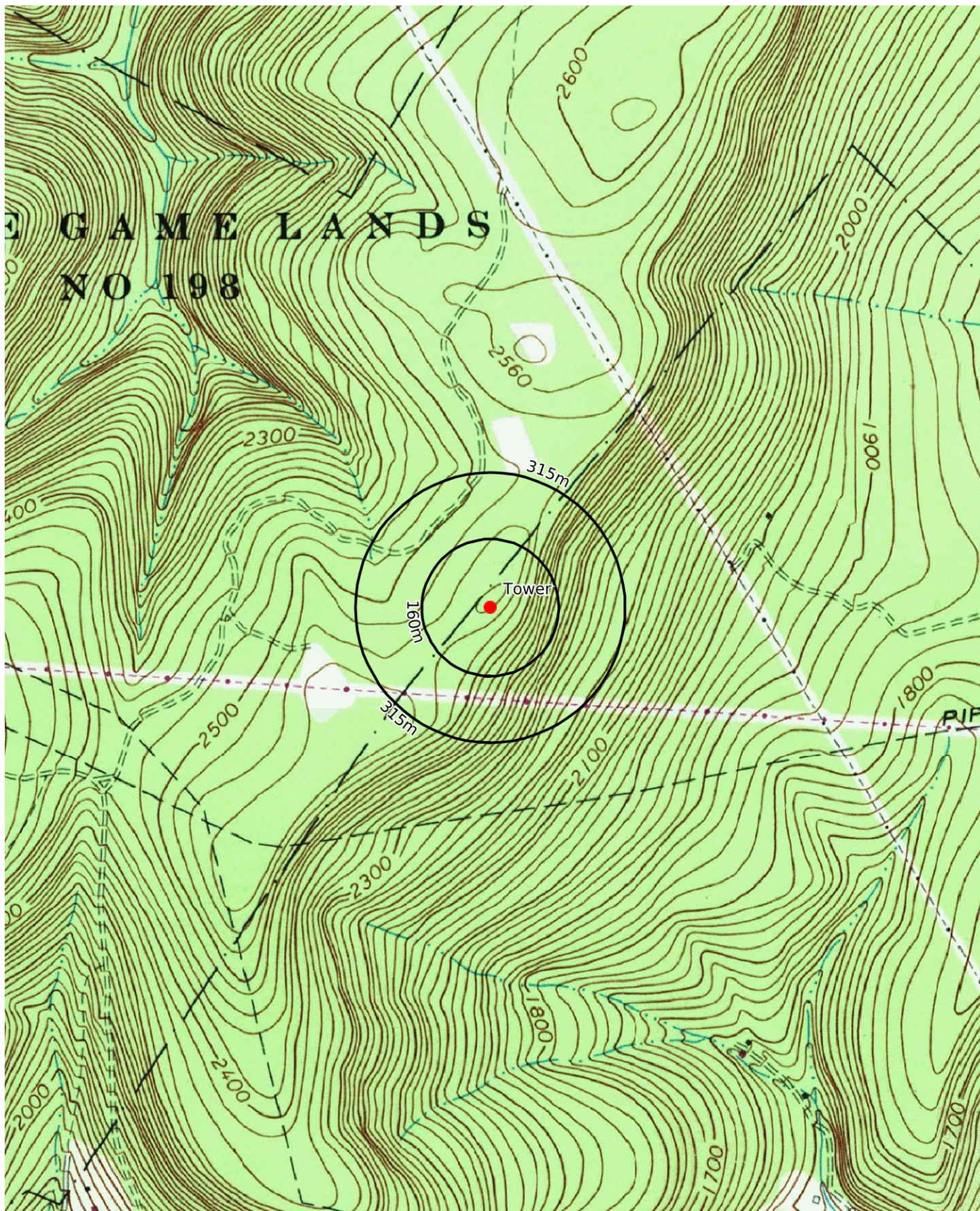
| Call<br>Status | City<br>St         | FCC File No.   | Channel<br>Freq. | ERP(kW)<br>HAAT(m) | Latitude<br>Longitude | Bearing<br>deg-True | Dist<br>(km)     | Req<br>(km)  |
|----------------|--------------------|----------------|------------------|--------------------|-----------------------|---------------------|------------------|--------------|
| WFGI-FM<br>LIC | JOHNSTOWN<br>PA    | BLH-880927KA   | 238B<br>95.5     | 57.000<br>323.0    | 40-22-18<br>078-58-57 | 265.0               | 38.89<br>-30.11  | 69<br>SHORT  |
| WICL<br>LIC    | WILLIAMSPORT<br>MD | BLH-981209KE   | 240A<br>95.9     | 3.300<br>91.0      | 39-36-18<br>077-46-49 | 144.2               | 109.14<br>37.14  | 72<br>CLEAR  |
| WZDB<br>LIC    | SYKESVILLE<br>PA   | BLH-90420ABT   | 240A<br>95.9     | 1.500<br>196.0     | 41-02-44<br>078-42-12 | 348.3<br>SS         | 72.90<br>0.90    | 72<br>CLOSE  |
| NEW-T<br>APP   | ALTOONA<br>PA      | BNPFT-70731ACN | 241D<br>96.1     | 0.140<br>0.0       | 40-24-11<br>078-31-35 | 0.0                 | 0.00<br>0.00     | 0<br>TRANS   |
| WKST-FM<br>LIC | PITTSBURGH<br>PA   | BLH-920206KC   | 241B<br>96.1     | 44.000<br>159.0    | 40-23-49<br>079-57-43 | 270.1               | 121.87<br>-56.13 | 178<br>SHORT |
| WSOX<br>LIC    | RED LION<br>PA     | BLH-41222GDH   | 241B<br>96.1     | 13.500<br>290.0    | 39-54-16<br>076-34-48 | 107.9               | 174.84<br>-3.16  | 178<br>SHORT |
| W242AR<br>LIC  | HANCOCK<br>MD      | BLFT-70418ADB  | 242D<br>96.3     | 0.019<br>79.0      | 39-42-36<br>078-10-11 | 158.4               | 82.75<br>0.00    | 0<br>TRANS   |
| W242BY<br>LIC  | CHAMBERSBURG<br>PA | BLFT-10907AFK  | 242D<br>96.3     | 0.250<br>172.0     | 39-55-41<br>077-41-44 | 126.5               | 88.27<br>0.00    | 0<br>TRANS   |
| WJSA-FM<br>LIC | JERSEY SHORE<br>PA | BLH-01123ASE   | 242B1<br>96.3    | 2.650<br>306.0     | 41-13-45<br>077-22-02 | 46.3<br>SS          | 134.09<br>38.09  | 96<br>CLEAR  |
| WKYE<br>LIC    | JOHNSTOWN<br>PA    | BMLH-60125AHR  | 243B<br>96.5     | 50.000<br>149.0    | 40-19-45<br>078-53-54 | 255.5               | 32.64<br>-36.36  | 69<br>SHORT  |
| WVNW<br>LIC    | BURNHAM<br>PA      | BLH-940801KB   | 244A<br>96.7     | 0.450<br>259.0     | 40-35-10<br>077-41-40 | 73.6                | 73.40<br>42.40   | 31<br>CLEAR  |
| W294AE<br>LIC  | ALTOONA<br>PA      | BLFT-940829TA  | 294D<br>106.7    | 0.010<br>536.0     | 40-29-15<br>078-21-09 | 57.4                | 17.48<br>0.00    | 0<br>TRANS   |
| NEW-T<br>APP   | NANTY GLO<br>PA    | BNPFT-70726ACD | 295D<br>106.9    | 0.250<br>265.0     | 40-30-20<br>078-48-12 | 296.0               | 26.10<br>0.00    | 0<br>TRANS   |

===== END OF FM SPACING STUDY FOR CHANNEL 241 =====

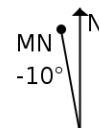
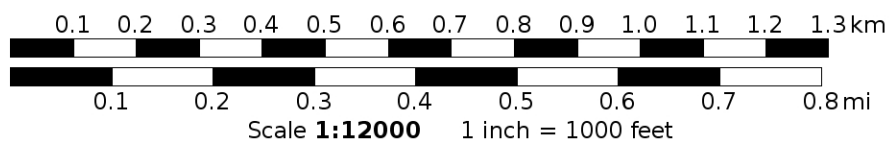








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## Facilities Proposed

The proposed operation will be on Channel 241D (96.1 MHz) with an effective radiated power of 0.140 kilowatts. Operation is proposed with a circularly-polarized directional antenna which will be side-mounted on an existing tower on a hilltop southwest of Altoona, with FCC Antenna Structure Registration Number 1200175.

## RF Exposure Calculations

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

*D* is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 500 meters. Values past this point are increasingly negligible.

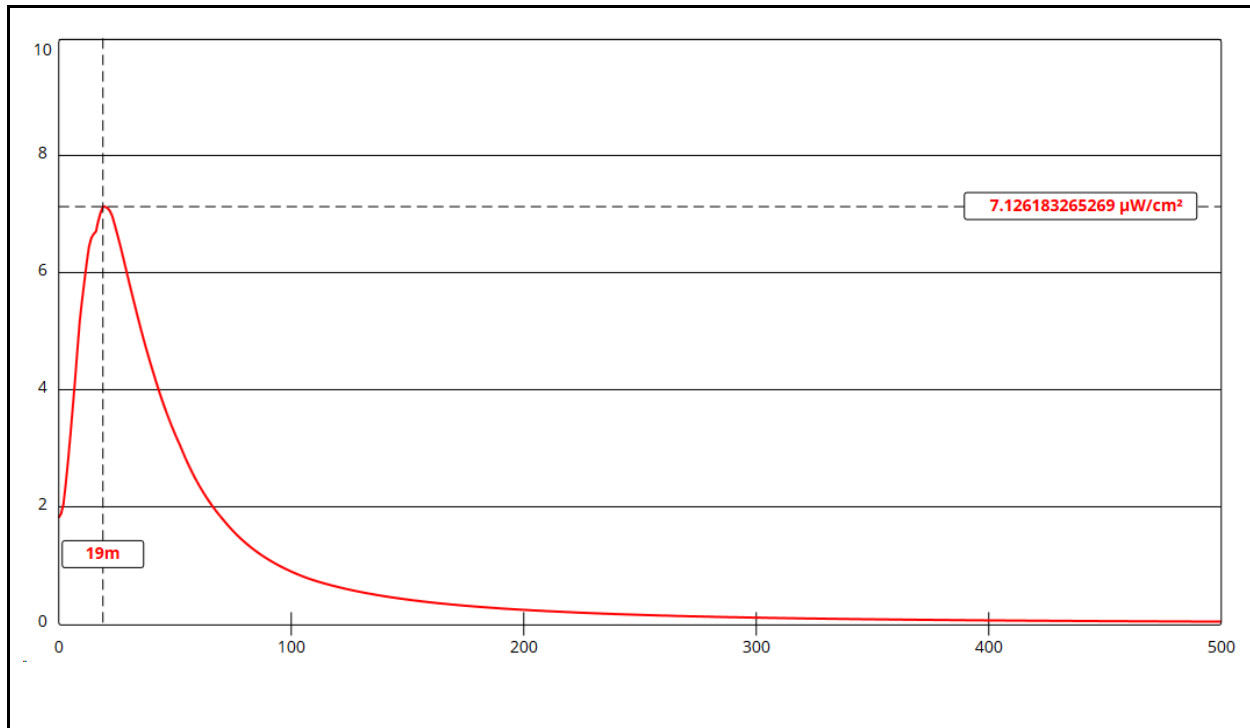
Calculations of the power density produced by the proposed antenna system therefore assume a Type 2 element pattern, which is the accepted element pattern for the Nicom BKG77-1 antenna to be used. The highest calculated ground level power density occurs at a distance of 19 meters from the base of the antenna support structure. At this point the power density is calculated to be 7.1  $\mu W/cm^2$ , which is 3.6% of 200  $\mu W/cm^2$  (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 1000 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment

when the calculated emissions from the applicant's proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.





## Ground-Level RF Exposure

OET FMModel

### Altoona 241D

Antenna Type: Nicom BKG77-1 (Type 2)  
No. of Elements: 1  
Element Spacing: 1.0 wavelength

Distance: 500 meters  
Horizontal ERP: 140 W  
Vertical ERP: 140 W

Antenna Height: 21 meters AGL

Maximum Calculated Power Density is 7.1  $\mu\text{W}/\text{cm}^2$  at 19 meters from the antenna structure.