

ENGINEERING STATEMENT
RE DTV BROADCAST ENGINEERING DATA
APPLICATION FOR MODIFICATION OF
CONSTRUCTION PERMIT
KTUZ-DT, SHAWNEE, OKLAHOMA
CHANNEL 29 1000 KW ND ERP 474 METERS HAAT

JULY 2006

COHEN, DIPPELL AND EVERIST, P.C.
CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington)
) ss
District of Columbia)

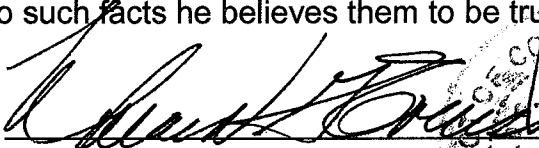
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

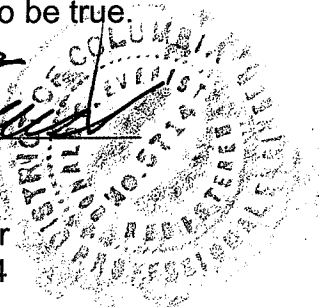
He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

That his qualifications are a matter of record in the Federal Communications Commission;

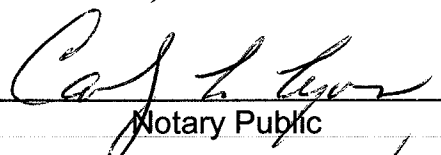
That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true

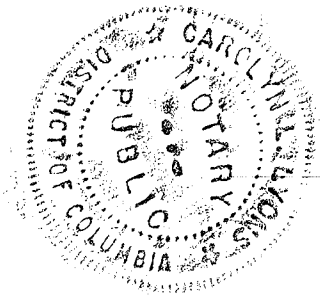

Donald G. Everist
District of Columbia
Professional Engineer
Registration No. 5714



Subscribed and sworn to before me this 6th day of July, 2006.


Notary Public

My Commission Expires: 2/28/2008



COHEN, DIPPELL AND EVERIST, P. C.

City of Washington)
) ss
District of Columbia)

Martin R. Doczkat being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer of the Pennsylvania State University, and is a staff engineer at Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

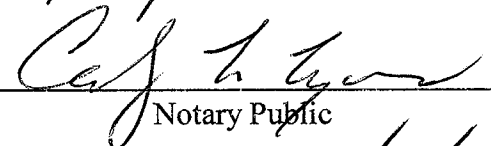
That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.



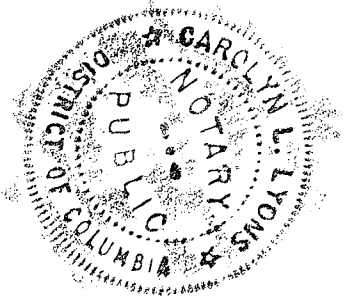
Martin R. Doczkat

Subscribed and sworn to before me this 6th day of July, 2006.



Notary Public

My Commission Expires: 2/28/2008



This engineering statement has been prepared in support of an application for modification of construction permit on behalf of Oklahoma Land Company, LLC, permittee of KTUZ-DT, Shawnee, Oklahoma.

KTUZ-TV is licensed to operate on NTSC television Channel 30 with a maximum visual effective radiated power of 5000 kW and a HAAT of 253 meters. KTUZ-DT an outstanding construction permit DTV Channel 29 with facilities of 1000 kW and HAAT 255 meters. As has been separately demonstrated by KTUZ-TV's current licensee, neither the KTUZ-TV analog nor the KTUZ-DT digital facilities of KTUZ-DT are capable of operating at these authorized power levels.

In the instant application, KTUZ-DT proposes to construct DT facilities of 1000 kW (non-directional) at a new transmitter site with an HAAT of 474 meters. Further, a companion application will be filed concurrently to request authority to analog facilities at the same proposed transmitter site.

There are two AM stations located within 3.2 km of the proposed transmitter site. There are also two stations KYIS(FM) and KMGL(FM), and two other DTV or NTSC stations within 100 meters of the proposed co-located KTUZ-DT site.

The DT antenna will be top-mounted on a new tower. The KTUZ-DT antenna will be located on a new tower having a total overall structure height above ground of 490 meters (1609 feet). The new transmitter site is located at 1501 NE 85th Street. The registration number for the tower is 1253490 and a vertical diagram of the tower is shown as Exhibit E-1.

The geographic coordinates of the proposed site are as follows:

North Latitude: 35° 33' 36"

West Longitude: 97° 29' 07"

NAD-27

Equipment Data

Antenna: ERI, Type ATW27H3-HTO-29H (or equivalent) directional antenna with 1° electrical beam tilt. The vertical plane pattern and other exhibits required by Section 73.625(c) are herein included as Exhibit E-2.

Transmission Line: 533.4 meters (1750 ft) of ERI, Type MACX675B, 75 ohm or equivalent

Power Data

| | | |
|--|----------|-----------|
| Transmitter output | 61.04 kW | 17.86 dBk |
| Transmission line loss | 60.7 % | 2.17 dB |
| Input power to the antenna | 37.04 kW | 15.69 dBk |
| Antenna power gain, | 27 | 14.31 dB |
| Non-Directional Effective Radiated Power | 1000 kW | 30 dBk |

Elevation Data

| | |
|--|---------------------------|
| Vertical dimension for Channel 29 antenna | 17.1 meters 56.2 feet |
| Overall height above ground of the proposed antenna structure (including beacon) | 490.5 meters 1609 feet |

| | |
|---|---------------------------|
| Center of radiation of Channel 29 antenna above ground | 480 meters 1575 feet |
| Elevation of site above mean sea level | 347.5 meters 1140 feet |
| Center of radiation of Channel 29 antenna above mean sea level | 827.5 meters 2715 feet |
| Overall height above mean sea level of tower and top-mounted antenna (including beacon) | 838 meters 2749 feet |
| Antenna height above average terrain | 474 meters |

Note: Slight height differences may result due to conversion to metric.

Allocation

An allocation study from the proposed site has been performed.

Coverage

The average elevation data for 3.2 to 16.1 km along each radial are based upon the 3-second NGDC profile data at every ten degrees in azimuth starting at N 0°ET.

The F(50,90) NTSC coverage contour has been computed from reference to the propagation data for Channels 14-69, as published by the FCC in Figure 10b , Section 73.699 of the FCC Rules and Regulations.

Utilizing the formula in Section 73.625(b)(2) of the Rules for the effective heights, it is found that the depression angle, A_h , varies from 0.58 to 0.63 degrees. Since the relative vertical field is greater than 90% of the maximum at these depression angles, the maximum power was used in determining the distance to the 80 dBu contour.

Table I includes the distances to the 48 dBu and 41 dBu F(50,90) coverage contour, the average elevation 3.2 to 16.1 km, and the antenna height above average terrain for each of the radials. As shown, the predicted City Grade, 80 dBu contour covers the community of license.

Population and Area Data

The population within the predicted KTUZ-DT coverage contour was determined by employing a computer program using the 2000 census data. The computer program overlaid the predicted 41 dBu contour over the land area in Shawnee and determined the population within the contour by using the centroids for the pertinent census blocks. A population of 1,469,332 people was determined. The land area of the contour was measured with a polar planimeter using the original map and the predicted F(50,90) 41 dBu contour which encompasses 39,816 sq. km and is shown in Exhibit E-3.

Longley-Rice Analysis

Longley-Rice analysis demonstrates that the proposed relocated KTUZ-DT operation does not cause excess interference to any facility that currently requires protection (i.e. analog and digital licenses and/or construction permits; DTV allotments) nor to any station with a Tentative DTV Channel Designation from either round 1 or round 2.

The attached tables identify in detail the additional stations potentially impacted by the proposed relocated KTUZ-DT operation referenced above. Table II shows the amount of new interference predicted to be caused by the proposed relocated KTUZ-DT operation to all existing facilities or authorizations (including Tentative DTV Channel Designations) beyond what was already caused by the KTUZ-DT facilities in its current construction permit (FCC File No.

BMPCDT-20040729ANF). KTUZ-DT is certified to operate with this current construction permit facility post-transition on FCC Form 381 (FCC File No. BCERCT-20041104AIH). Other than interference to the authorized KTUZ-TV analog operation on channel 30, the proposed relocated KTUZ-DT facility does not cause new interference in excess of 0.1% to any facility requiring protection (including Tentative DTV Channel Designations). The interference to KTUZ-TV will be eliminated when the analog operation is also relocated to the Richland Tower.

Table III shows the amount of new interference predicted to be caused by the proposed relocated KTUZ-DT operation to all existing facilities or authorizations (including Tentative DTV Channel Designations) beyond what was already caused by KTUZ's DTV allotment from its current site. As shown, the proposed DTV operation does not cause interference in excess of 2.0% to any facility requiring protection except for the authorized KTUZ-TV analog operation on channel 30. As noted above, this interference will be eliminated when the analog operation is also relocated to the Richland Tower.

To perform this study, a version of the Longley-Rice program described in OET Bulletin No. 69 (July 2, 1997) and the Public Notice, "Additional Application Processing Guidelines for Digital Television (DTV)" (August 1998) was executed. This version uses the FCC's FORTRAN-77 code that has been modified only to the extent necessary (primarily I/O handling) for the program to run on a Win32/Intel i386-based platform.

Comparison of service/interference areas and populations indicates that this model closely matches the FCC's evaluation program. Best efforts have been made to use data and calculations identical to the FCC's program. Any slight differences are attributable to compiler, operating

system, and/or processor characteristics. The effect of any variance in calculated population values versus the FCC's program is minimized when differencing a given model's results, such as calculating new interference as total interference less baseline interference. Any variance effect is further reduced when using ratios of calculated population values such as measuring the incremental population affected as a percent of the total population served. The model employs the Longley-Rice propagation methodology and evaluates in grid cells of approximately 4 km² using 3-second terrain data sampled approximately every 1.0 km at one degree azimuth intervals with 2000 census centroids.

Other Licensed and Broadcast facilities

No adverse technical effect is anticipated by the proposed DT operation to any other FCC licensed facility. If required, the applicant will install filters or take other measures as necessary to resolve the problem.

Radiofrequency Field ("RFF") Assessment

As previously indicated, there are two AM stations located within 3.2 km of the proposed tower site. According to the FCC data base, there are two FM stations and two other DTV or NTSC TV stations located within 100 meters aside from the proposed operation of KTUZ-TV. The proposed tower site is located is at 1501 NE 85th Street. Access to the tower property will be prevented by a chain link fence with a locked gate.

NTSC

For NTSC operation KTUZ-TV proposes to use an ERI, Type ATW30H4-HSCX-30H or equivalent horizontally polarized antenna with 5000 kW ERP and 1° electrical beam tilt and a

radiation center of 461 meters above ground. The elevation pattern for this antenna shows a maximum relative field of 0.1 or less towards the ground (10° to 90° below the horizontal) in the vicinity of the tower. Using this relative field factor and the procedures prescribed in OET Bulletin 65 (Edition 97-01 and Supplement A), the maximum RFF resulting from the proposed operation is less than $4.0 \mu\text{W}/\text{cm}^2$ two meters above ground. This is less than 1.1 percent of the $379.3 \mu\text{W}/\text{cm}^2$ maximum human exposure to RFF recommended by the current FCC guidelines for the general population.

DTV

For DTV operation KTUZ-DT proposes to use an ERI, Type ATW27H4-HTO-29H or equivalent horizontally polarized antenna with 1000 kW ERP and 1° electrical beam tilt and a radiation center of 480 meters above ground. The elevation pattern for this antenna shows a maximum relative field of 0.1 or less towards the ground (10° to 90° below the horizontal) in the vicinity of the tower. Using this relative field factor and the procedures prescribed in OET Bulletin 65 (Edition 97-01 and Supplement A), the maximum RFF resulting from the proposed operation is less than $1.5 \mu\text{W}/\text{cm}^2$ two meters above ground. This is less than 0.4% of the $375.3 \mu\text{W}/\text{cm}^2$ maximum human exposure to RFF recommended by the current FCC guidelines for the general population.

The following table will summarize predicted RFF from the remaining FM and television stations authorized to operate within 100 meters of the proposed site.

| <u>Station Status</u> | <u>Channel</u> | <u>ERP kW</u> | Assumed Downward Relative <u>Field</u> | <u>RCAGL-2</u> meters | Predicted <u>RFF</u> $\mu\text{W}/\text{cm}^2$ | Uncontrolled <u>MPE</u> $\mu\text{W}/\text{cm}^2$ | <u>%Uncontrolled</u> |
|---------------------------|----------------|-------------------|---|--------------------------|--|---|----------------------|
| KOCB(TV) Lic | 34 | 1170 (H) | 0.2 | 372 | 5.7 | 395.3 | 1.5 |
| KOCB-DT STA | 33 | 3 (H) | 0.5 | 90 | 3.1 | 391.3 | 0.8 |
| KYIS(FM) Lic | 255 | 100 (H+V) | 0.3 | 339 | 5.3 | 200 | 2.7 |
| KMGL(FM) CP | 281 | 100 (H+V) | 0.3 | 473 | 2.7 | 200 | 1.4 |

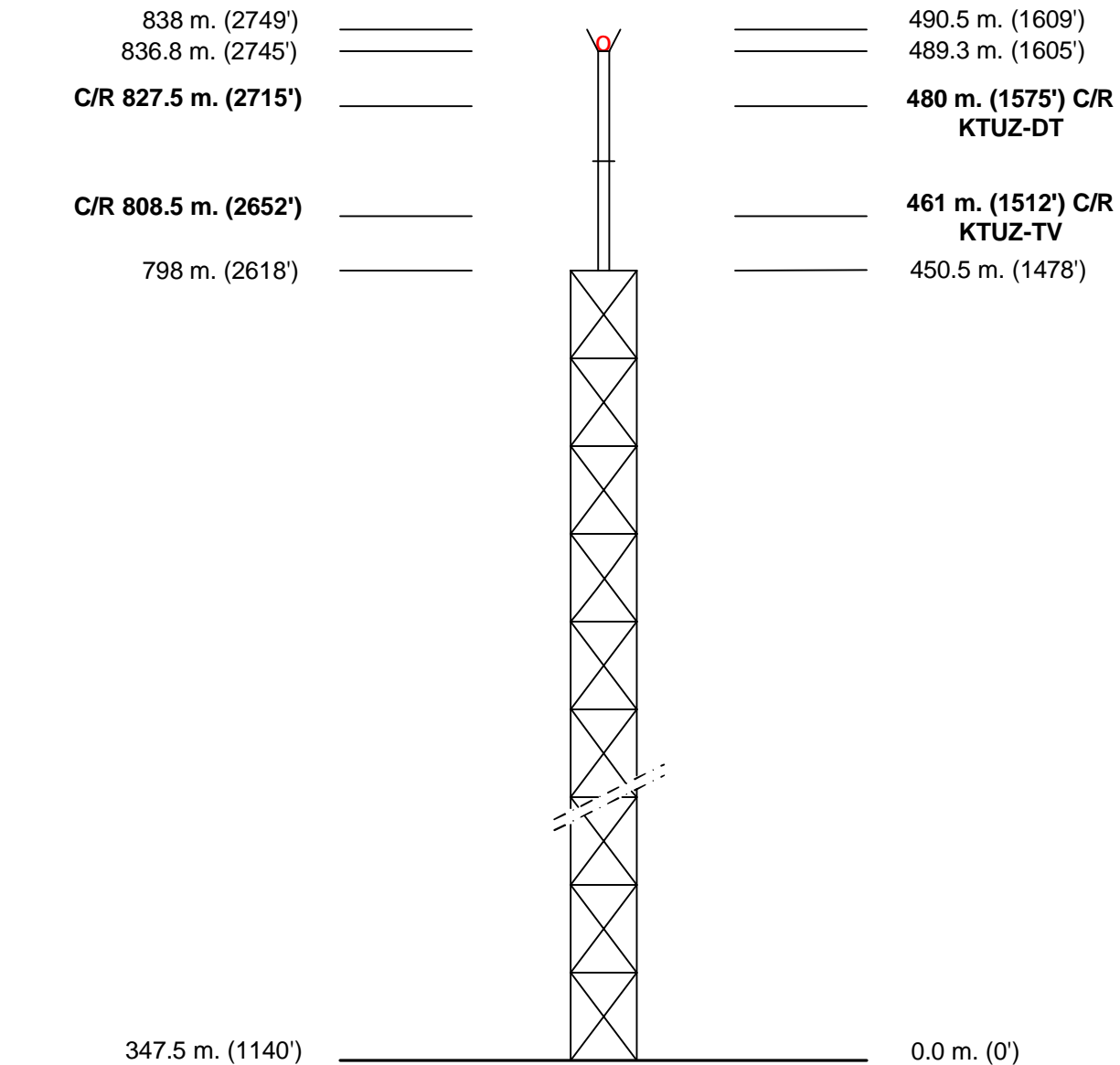
Therefore, the total contribution by the operations within 100 meters of the proposed site at 2 meters above ground level is less than 8% of the current FCC guidelines for general population exposure.

The proposed operation based upon the current OET Bulletin No. 65, Edition 97-01 dated August 1997 and Supplement A meets the provisions of the FCC radio frequency field ("RFF") guidelines, and thus, complies with Section 1.1307 of the FCC Rules. Provisions will be made to reduce power or to terminate the transmitter emissions, as appropriate, when it is necessary for authorized personnel to be on the tower.

Authorized personnel and rigging contractors will be alerted to the potential zone of high radiation on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

ABOVE MEAN SEA LEVEL

ABOVE GROUND



(NOT TO SCALE)

PROPOSED TOWER WITH
CANDLEABRA TOP FOR
KTUZ-TV/DT, SHAWNEE, OKLAHOMA
JULY 2006

EXHIBIT E-2

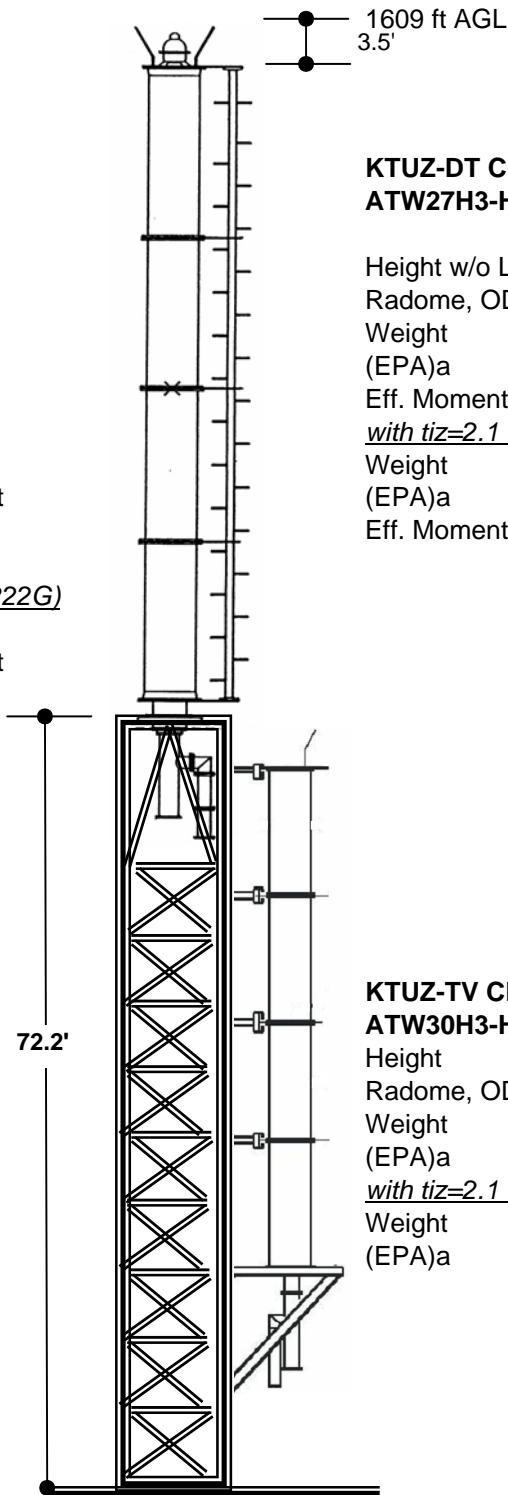
ANTENNA MANUFACTURER DATA

KTUZ-DT, SHAWNEE, OKLAHOMA

**STACKED ANTENNA
KTUZ-TV30 & DT29
Shawnee, OK**

STACK MECHANICAL DATA

| | |
|--|------------|
| Height w/ LR | 129 ft |
| CaAa* | 444.4 sqft |
| Weight (no ice) | 32400 lbs |
| Eff. Moment Arm | 43.4 ft. |
| <u>with $t_{iz}=2.1$ @ 40 mph (ANSI/TIA-222G)</u> | |
| Weight | 61400 lbs |
| CaAa* | 873.9 sqft |
| Eff. Moment Arm | 39.5 ft |



**KTUZ-DT Ch29
ATW27H3-HTO-29H**

| | |
|--|-----------|
| Height w/o Lt Spurs | 53.3 ft |
| Radome, OD | 14.4 in |
| Weight | 9635 lbs |
| (EPA)a | 54.8 sqf |
| Eff. Moment Arm | 30 ft |
| <u>with $t_{iz}=2.1$ @ 40 mph (ANSI/TIA-222G)</u> | |
| Weight | 12720 lbs |
| (EPA)a | 72 sqf |
| Eff. Moment Arm | 28.8 ft |

**KTUZ-TV CH30
ATW30H3-HSCX-30H**

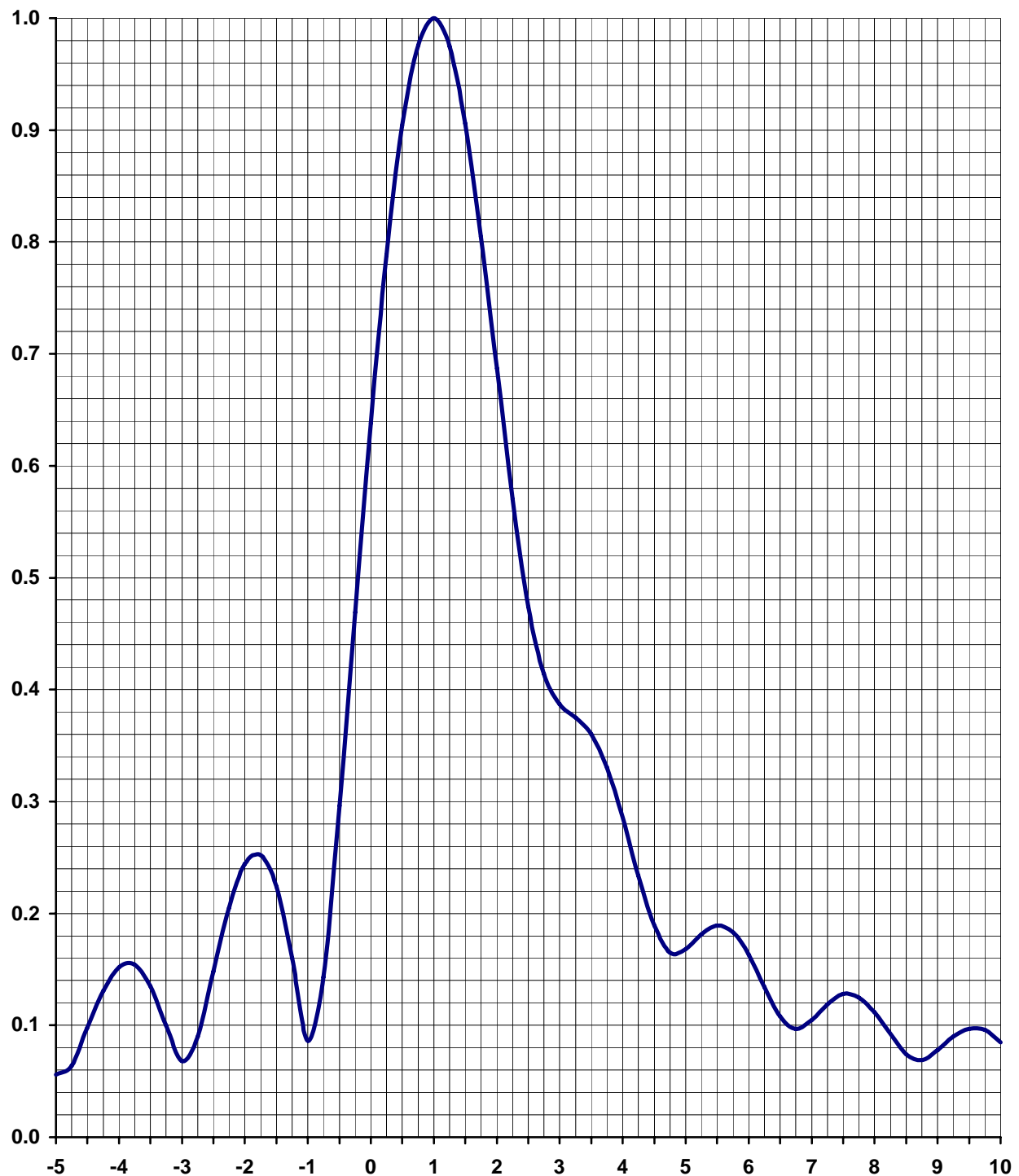
| | |
|--|----------|
| Height | 58.8 ft |
| Radome, OD | 12.4 in |
| Weight | 2050 lbs |
| (EPA)a | 99.3 sqf |
| <u>with $t_{iz}=2.1$ @ 40 mph (ANSI/TIA-222G)</u> | |
| Weight | 4955 lbs |
| (EPA)a | 99.3 sqf |

***NOTE:**

The CaAa are effective projected areas based on using an Velocity Pressure Coefficient(K_z) of 2.01, Wind Direction Probability Factor(K_d) of 0.95, and a Gust Effect Factor(G_h) of 0.85.

ELEVATION PATTERN

| | | | | |
|---------------------|-----------------|--------------|----------------------|--------------------|
| TYPE: | ATW27H4H | | Frequency: | 29 (DTV) |
| Directivity: | Numeric | dBd | Location: | Shawnee, OK |
| Main Lobe: | 27.00 | 14.31 | Beam Tilt: | 1.00 |
| Horizontal: | 10.99 | 10.41 | Polarization: | Horizontal |



TABULATED DATA FOR ELEVATION PATTERN

ATW27H4H

-5 to 10 degrees in 0.25 increments

10 to 90 degrees in 0.50 increments

| ANGLE | FIELD | dB | ANGLE | FIELD | dB | ANGLE | FIELD | dB | ANGLE | FIELD | dB | ANGLE | FIELD | dB |
|--------|-------|--------|-------|-------|--------|-------|-------|--------|-------|-------|--------|-------|-------|--------|
| -5.000 | 0.056 | -25.04 | 6.75 | 0.097 | -20.26 | 27.00 | 0.021 | -33.56 | 50.50 | 0.026 | -31.70 | 74.00 | 0.028 | -31.06 |
| -4.750 | 0.064 | -23.88 | 7.00 | 0.105 | -19.58 | 27.50 | 0.024 | -32.40 | 51.00 | 0.032 | -29.90 | 74.50 | 0.021 | -33.56 |
| -4.500 | 0.098 | -20.18 | 7.25 | 0.119 | -18.49 | 28.00 | 0.035 | -29.12 | 51.50 | 0.032 | -29.90 | 75.00 | 0.014 | -37.08 |
| -4.250 | 0.131 | -17.65 | 7.50 | 0.128 | -17.86 | 28.50 | 0.035 | -29.12 | 52.00 | 0.026 | -31.70 | 75.50 | 0.006 | -44.44 |
| -4.000 | 0.152 | -16.36 | 7.75 | 0.125 | -18.06 | 29.00 | 0.024 | -32.40 | 52.50 | 0.016 | -35.92 | 76.00 | 0.003 | -50.46 |
| -3.750 | 0.154 | -16.25 | 8.00 | 0.112 | -19.02 | 29.50 | 0.019 | -34.42 | 53.00 | 0.013 | -37.72 | 76.50 | 0.009 | -40.92 |
| -3.500 | 0.135 | -17.39 | 8.25 | 0.092 | -20.72 | 30.00 | 0.029 | -30.75 | 53.50 | 0.022 | -33.15 | 77.00 | 0.016 | -35.92 |
| -3.250 | 0.100 | -20.00 | 8.50 | 0.074 | -22.62 | 30.50 | 0.035 | -29.12 | 54.00 | 0.031 | -30.17 | 77.50 | 0.021 | -33.56 |
| -3.000 | 0.068 | -23.35 | 8.75 | 0.069 | -23.22 | 31.00 | 0.028 | -31.06 | 54.50 | 0.034 | -29.37 | 78.00 | 0.026 | -31.70 |
| -2.750 | 0.090 | -20.92 | 9.00 | 0.078 | -22.16 | 31.50 | 0.018 | -34.89 | 55.00 | 0.031 | -30.17 | 78.50 | 0.029 | -30.75 |
| -2.500 | 0.148 | -16.59 | 9.25 | 0.090 | -20.92 | 32.00 | 0.023 | -32.77 | 55.50 | 0.023 | -32.77 | 79.00 | 0.032 | -29.90 |
| -2.250 | 0.205 | -13.76 | 9.50 | 0.097 | -20.26 | 32.50 | 0.032 | -29.90 | 56.00 | 0.014 | -37.08 | 79.50 | 0.034 | -29.37 |
| -2.000 | 0.244 | -12.25 | 9.75 | 0.096 | -20.35 | 33.00 | 0.033 | -29.63 | 56.50 | 0.014 | -37.08 | 80.00 | 0.035 | -29.12 |
| -1.750 | 0.252 | -11.97 | 10.00 | 0.085 | -21.41 | 33.50 | 0.023 | -32.77 | 57.00 | 0.024 | -32.40 | 80.50 | 0.035 | -29.12 |
| -1.500 | 0.224 | -13.00 | 10.50 | 0.056 | -25.04 | 34.00 | 0.016 | -35.92 | 57.50 | 0.032 | -29.90 | 81.00 | 0.034 | -29.37 |
| -1.250 | 0.160 | -15.92 | 11.00 | 0.062 | -24.15 | 34.50 | 0.025 | -32.04 | 58.00 | 0.035 | -29.12 | 81.50 | 0.033 | -29.63 |
| -1.000 | 0.086 | -21.31 | 11.50 | 0.079 | -22.05 | 35.00 | 0.033 | -29.63 | 58.50 | 0.033 | -29.63 | 82.00 | 0.031 | -30.17 |
| -0.750 | 0.143 | -16.89 | 12.00 | 0.069 | -23.22 | 35.50 | 0.030 | -30.46 | 59.00 | 0.026 | -31.70 | 82.50 | 0.029 | -30.75 |
| -0.500 | 0.296 | -10.57 | 12.50 | 0.046 | -26.74 | 36.00 | 0.020 | -33.98 | 59.50 | 0.016 | -35.92 | 83.00 | 0.027 | -31.37 |
| -0.250 | 0.469 | -6.58 | 13.00 | 0.052 | -25.68 | 36.50 | 0.017 | -35.39 | 60.00 | 0.011 | -39.17 | 83.50 | 0.024 | -32.40 |
| 0.000 | 0.638 | -3.90 | 13.50 | 0.067 | -23.48 | 37.00 | 0.027 | -31.37 | 60.50 | 0.019 | -34.42 | 84.00 | 0.022 | -33.15 |
| 0.250 | 0.788 | -2.07 | 14.00 | 0.059 | -24.58 | 37.50 | 0.032 | -29.90 | 61.00 | 0.028 | -31.06 | 84.50 | 0.019 | -34.42 |
| 0.500 | 0.904 | -0.88 | 14.50 | 0.039 | -28.18 | 38.00 | 0.028 | -31.06 | 61.50 | 0.034 | -29.37 | 85.00 | 0.017 | -35.39 |
| 0.750 | 0.976 | -0.21 | 15.00 | 0.044 | -27.13 | 38.50 | 0.018 | -34.89 | 62.00 | 0.037 | -28.64 | 85.50 | 0.015 | -36.48 |
| 1.000 | 1.000 | 0.00 | 15.50 | 0.058 | -24.73 | 39.00 | 0.017 | -35.39 | 62.50 | 0.034 | -29.37 | 86.00 | 0.013 | -37.72 |
| 1.250 | 0.975 | -0.22 | 16.00 | 0.052 | -25.68 | 39.50 | 0.027 | -31.37 | 63.00 | 0.028 | -31.06 | 86.50 | 0.011 | -39.17 |
| 1.500 | 0.906 | -0.86 | 16.50 | 0.034 | -29.37 | 40.00 | 0.032 | -29.90 | 63.50 | 0.018 | -34.89 | 87.00 | 0.009 | -40.92 |
| 1.750 | 0.805 | -1.88 | 17.00 | 0.038 | -28.40 | 40.50 | 0.028 | -31.06 | 64.00 | 0.011 | -39.17 | 87.50 | 0.007 | -43.10 |
| 2.000 | 0.687 | -3.26 | 17.50 | 0.052 | -25.68 | 41.00 | 0.018 | -34.89 | 64.50 | 0.014 | -37.08 | 88.00 | 0.006 | -44.44 |
| 2.250 | 0.570 | -4.88 | 18.00 | 0.047 | -26.56 | 41.50 | 0.015 | -36.48 | 65.00 | 0.023 | -32.77 | 88.50 | 0.004 | -47.96 |
| 2.500 | 0.474 | -6.48 | 18.50 | 0.031 | -30.17 | 42.00 | 0.025 | -32.04 | 65.50 | 0.031 | -30.17 | 89.00 | 0.003 | -50.46 |
| 2.750 | 0.414 | -7.66 | 19.00 | 0.033 | -29.63 | 42.50 | 0.032 | -29.90 | 66.00 | 0.037 | -28.64 | 89.50 | 0.001 | -60.00 |
| 3.000 | 0.387 | -8.25 | 19.50 | 0.046 | -26.74 | 43.00 | 0.030 | -30.46 | 66.50 | 0.039 | -28.18 | 90.00 | 0.000 | --- |
| 3.250 | 0.375 | -8.52 | 20.00 | 0.045 | -26.94 | 43.50 | 0.021 | -33.56 | 67.00 | 0.037 | -28.64 | | | |
| 3.500 | 0.360 | -8.87 | 20.50 | 0.030 | -30.46 | 44.00 | 0.014 | -37.08 | 67.50 | 0.033 | -29.63 | | | |
| 3.750 | 0.330 | -9.63 | 21.00 | 0.028 | -31.06 | 44.50 | 0.021 | -33.56 | 68.00 | 0.025 | -32.04 | | | |
| 4.000 | 0.286 | -10.87 | 21.50 | 0.040 | -27.96 | 45.00 | 0.030 | -30.46 | 68.50 | 0.016 | -35.92 | | | |
| 4.250 | 0.234 | -12.62 | 22.00 | 0.042 | -27.54 | 45.50 | 0.032 | -29.90 | 69.00 | 0.008 | -41.94 | | | |
| 4.500 | 0.189 | -14.47 | 22.50 | 0.030 | -30.46 | 46.00 | 0.026 | -31.70 | 69.50 | 0.011 | -39.17 | | | |
| 4.750 | 0.165 | -15.65 | 23.00 | 0.024 | -32.40 | 46.50 | 0.016 | -35.92 | 70.00 | 0.019 | -34.42 | | | |
| 5.000 | 0.168 | -15.49 | 23.50 | 0.036 | -28.87 | 47.00 | 0.015 | -36.48 | 70.50 | 0.028 | -31.06 | | | |
| 5.250 | 0.181 | -14.85 | 24.00 | 0.040 | -27.96 | 47.50 | 0.025 | -32.04 | 71.00 | 0.034 | -29.37 | | | |
| 5.500 | 0.189 | -14.47 | 24.50 | 0.031 | -30.17 | 48.00 | 0.032 | -29.90 | 71.50 | 0.039 | -28.18 | | | |
| 5.750 | 0.183 | -14.75 | 25.00 | 0.021 | -33.56 | 48.50 | 0.031 | -30.17 | 72.00 | 0.041 | -27.74 | | | |
| 6.000 | 0.163 | -15.76 | 25.50 | 0.031 | -30.17 | 49.00 | 0.024 | -32.40 | 72.50 | 0.040 | -27.96 | | | |
| 6.250 | 0.134 | -17.46 | 26.00 | 0.038 | -28.40 | 49.50 | 0.014 | -37.08 | 73.00 | 0.038 | -28.40 | | | |
| 6.500 | 0.108 | -19.33 | 26.50 | 0.033 | -29.63 | 50.00 | 0.016 | -35.92 | 73.50 | 0.034 | -29.37 | | | |

TABLE I
DTV COMPUTED COVERAGE DATA
FOR THE PROPOSED OPERATION OF
KTUZ-DT, SHAWNEE, OKLAHOMA
CHANNEL 29 1000 KW 474 METERS HAAT
JULY 2006

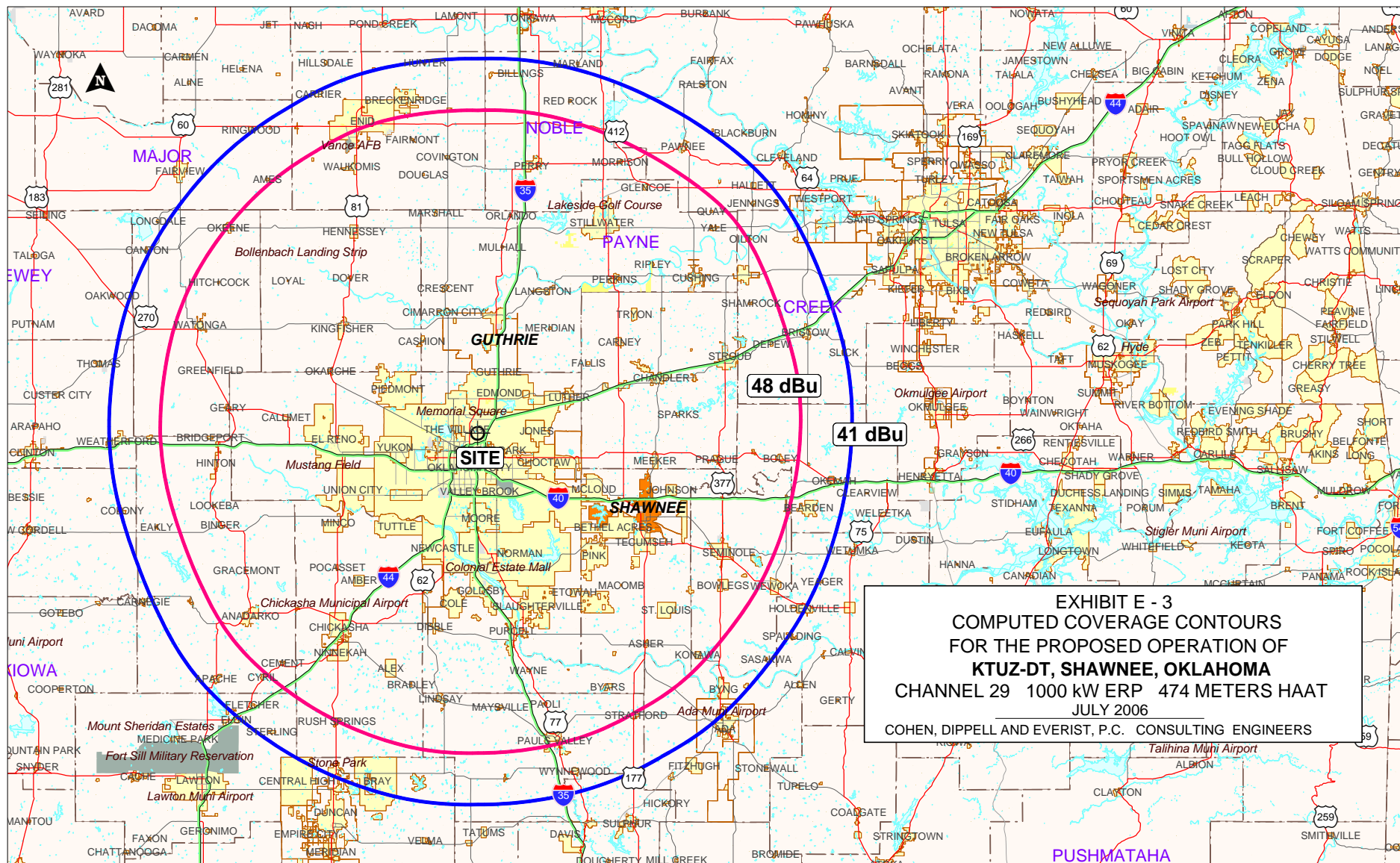
| <u>Radial</u> <u>Bearing</u> N ° E, T | <u>Average*</u> <u>Elevation</u> <u>3.2 to 16.1 km</u> | <u>Effective</u> <u>Height</u> meters | <u>Depressio</u> <u>n</u> <u>Angle</u> | <u>ERP At</u> <u>Radio</u> <u>Horizon</u> kW | <u>Distance to Contour F(50,90)</u> | |
|---|--|---|--|---|--|---|
| | meters | | | | <u>48 dBu</u> <u>City Grade</u> km | <u>41 dBu</u> <u>Noise-Limited</u> km |
| 0 | 354.1 | 473.4 | 0.603 | 1000 | 97.0 | 112.5 |
| 45 | 320.1 | 507.4 | 0.624 | 1000 | 99.8 | 115.0 |
| 90 | 350.2 | 477.3 | 0.605 | 1000 | 97.3 | 112.8 |
| 135 | 357.5 | 470.0 | 0.601 | 1000 | 96.7 | 112.3 |
| 180 | 364.3 | 463.2 | 0.596 | 1000 | 96.2 | 111.7 |
| 225 | 360.2 | 467.3 | 0.599 | 1000 | 96.5 | 112.0 |
| 270 | 367.8 | 459.7 | 0.594 | 1000 | 95.9 | 111.4 |
| 315 | 341.4 | 486.1 | 0.611 | 1000 | 98.0 | 113.5 |

*Based on data from FCC 3-second data base

DTV Channel 29 (560-566 MHz)
Average Elevation 3.2 to 16.1 km 353.5 meters AMSL
Center of Radiation 827.5 meters AMSL
Antenna Height Above Average Terrain 474 meters
Effective Radiated Power 1000 kW (30 dBk) mAX

North Latitude: 35° 33' 36"
West Longitude: 97° 29' 07"

(NAD-27)



COHEN, DIPPELL AND EVERIST, P. C.

TABLE II
PREDICTED LONGLEY-RICE ANALYSIS
ABOVE THE CERTIFIED CP FACILITY
FROM THE PROPOSED OPERATION
AT THE RICHLAND TOWER SITE FOR
KTUZ-DT, SHAWNEE, OKLAHOMA
CHANNEL 29 1000 KW ND ERP 474 METERS HAAT
JULY 2006

| <u>Channel</u> | <u>Call</u> | <u>City/State</u> | <u>Dist(km)</u> | <u>Status</u> | <u>Application Ref. No.</u> | <u>Results</u> |
|----------------|-------------|-------------------|-----------------|---------------|-----------------------------|-----------------|
| 25 | KOKH-TV | OKLAHOMA CITY OK | 1.2 | LIC | BLCT-20050621AAN | no interference |
| 26 | 960920IQ | ENID OK | 106.8 | APP | BPET-19960920IQ | no interference |
| 26 | 970331SF | ENID OK | 50.4 | APP | BPET-19970331SF | 0.00% |
| 27 | KGBN-CA | PONCA CITY OK | 128.7 | LIC | BLTTL-19901217IN | no interference |
| 28 | KTPX-DT | OKMULGEE OK | 126.6 | R2_PRT | BLCDDT-20020510AAQ | 0.00% |
| 28 | KGLB-DT | OKMULGEE OK | 126.6 | ALLOT | | 0.00% |
| 28 | KFDX-DT | WICHITA FALLS TX | 209.9 | R2_PRT | BMPCDDT-20040312ADT | no interference |
| 28 | KFDX-DT | WICHITA FALLS TX | 209.8 | ALLOT | | no interference |
| 29 | KHOG-TV | FAYETTEVILLE AR | 310.9 | LIC | BLCT-19980109KF | 0.07% |
| 29 | KPTS-DT | HUTCHINSON KS | 278.6 | LIC | BLEDT-20030724AER | 0.00% |
| 29 | KPTS-DT | HUTCHINSON KS | 278.6 | ALLOT | | 0.03% |
| 29 | KTZT-CA | TULSA OK | 149.8 | LIC | BLTTL-19991126AAQ | 0.00% |
| 29 | KRBC-DT | ABILENE TX | 419.2 | R2_PRT | BMPCDDT-20040802AMT | no interference |
| 29 | KRBC-DT | ABILENE TX | 419.0 | ALLOT | | no interference |
| 29 | KMPX | DECATUR TX | 333.7 | LIC | BLCT-20050707ABJ | -0.02% |
| 30 | KTUZ-TV | SHAWNEE OK | 33.6 | LIC | BLCT-20001108ABD | 3.25%* |
| 30 | KTUZ-TV | SHAWNEE OK | 33.6 | CP | BPCT-20040729AOV | 3.35%* |
| 36 | KCHM-LP | OKLAHOMA CITY OK | 1.0 | CP | BMJPTTA-20040504ABL | 0.00% |
| 36 | KCHM-LP | OKLAHOMA CITY OK | 21.3 | APP | BMPTTA-20050707AAW | 0.00% |

*See text for explanation of this interference.

COHEN, DIPPELL AND EVERIST, P. C.

TABLE III
PREDICTED LONGLEY-RICE INTERFERENCE
ABOVE THE ALLOTTED FACILITY
FOR THE PROPOSED OPERATION AT
THE RICHLAND TOWER SITE FOR
KTUZ-DT, SHAWNEE, OKLAHOMA
CHANNEL 29 1000 KW ERP ND 474 METERS HAAT
JULY 2006

| <u>Channel</u> | <u>Call</u> | <u>City/State</u> | <u>Dist(km)</u> | <u>Status</u> | <u>Application Ref. No.</u> | <u>Results</u> |
|----------------|-------------|-------------------|-----------------|---------------|-----------------------------|-----------------|
| 25 | KOKH-TV | OKLAHOMA CITY OK | 1.2 | LIC | BLCT-20050621AAN | no interference |
| 26 | 960920IQ | ENID OK | 106.8 | APP | BPET-19960920IQ | no interference |
| 26 | 970331SF | ENID OK | 50.4 | APP | BPET-19970331SF | 0.00% |
| 27 | KGBN-CA | PONCA CITY OK | 128.7 | LIC | BLTTL-19901217IN | no interference |
| 28 | KTPX-DT | OKMULGEE OK | 126.6 | R2_PRT | BLCDDT-20020510AAQ | 0.00% |
| 28 | KGLB-DT | OKMULGEE OK | 126.6 | ALLOT | | 0.00% |
| 28 | KFDX-DT | WICHITA FALLS TX | 209.9 | R2_PRT | BMPCDDT-20040312ADT | no interference |
| 28 | KFDX-DT | WICHITA FALLS TX | 209.8 | ALLOT | | no interference |
| 29 | KHOG-TV | FAYETTEVILLE AR | 310.9 | LIC | BLCT-19980109KF | 1.09% |
| 29 | KPTS-DT | HUTCHINSON KS | 278.6 | LIC | BLEDT-20030724AER | 0.00% |
| 29 | KPTS-DT | HUTCHINSON KS | 278.6 | ALLOT | | 0.03% |
| 29 | KTZT-CA | TULSA OK | 149.8 | LIC | BLTTL-19991126AAQ | 0.00% |
| 29 | KRBC-DT | ABILENE TX | 419.2 | R2_PRT | BMPCDDT-20040802AMT | no interference |
| 29 | KRBC-DT | ABILENE TX | 419.0 | ALLOT | | no interference |
| 29 | KMPX | DECATUR TX | 333.7 | LIC | BLCT-20050707ABJ | 0.01% |
| 30 | KTUZ-TV | SHAWNEE OK | 33.6 | LIC | BLCT-20001108ABD | 3.25%* |
| 30 | KTUZ-TV | SHAWNEE OK | 33.6 | CP | BPCT-20040729AOV | 3.36%* |
| 36 | KCHM-LP | OKLAHOMA CITY OK | 1.0 | CP | BMJPTTA-20040504ABL | 0.00% |
| 36 | KCHM-LP | OKLAHOMA CITY OK | 21.3 | APP | BMPTTA-20050707AAW | 0.00% |

*See text for explanation of this interference.

SECTION III-D - DTV Engineering

Complete Questions 1-5 of the Certification Checklist and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.

Certification Checklist: A correct answer of "Yes" to all of the questions below will ensure an expeditious grant of a construction permit. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:

- (a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
- (b) It will operate from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
- (c) It will operate with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No

2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. ☐ Yes ☐ No

Applicant must **submit the Exhibit** called for in Item 13.

3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community. ☐ Yes ☐ No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable. ☐ Yes ☐ No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require reregistration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7. ☐ Yes ☐ No

SECTION III-D DTV Engineering

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1. Channel Number: DTV _____ Analog TV, if any _____

2. Zone: ☐ I ☐ II ☐ III

3. Antenna Location Coordinates: (NAD 27)

_____ ° _____ ' _____ " ☐ N ☐ S Latitude
_____ ° _____ ' _____ " ☐ E ☐ W Longitude

4. Antenna Structure Registration Number: _____

☐ Not applicable ☐ FAA Notification Filed with FAA

5. Antenna Location Site Elevation Above Mean Sea Level: _____ meters

6. Overall Tower Height Above Ground Level: _____ meters

7. Height of Radiation Center Above Ground Level: _____ meters

8. Height of Radiation Center Above Average Terrain: _____ meters

9. Maximum Effective Radiated Power (average power): _____ kW

10. Antenna Specifications:

a.

| | |
|--------------|-------|
| Manufacturer | Model |
|--------------|-------|

b. Electrical Beam Tilt: _____ degrees ☐ Not Applicable

c. Mechanical Beam Tilt: _____ degrees toward azimuth _____ degrees True ☐ Not Applicable

Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c).

Exhibit No.

d. Polarization: ☐ Horizontal ☐ Circular ☐ Elliptical

TECH BOX

e. Directional Antenna Relative Field Values: ☐ Not applicable (Nondirectional)

Rotation: _____ ° ☐ No rotation

| Degree | Value | Degree | Value | Degree | Value | Degree | Value | Degree | Value | Degree | Value |
|---------------------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| 0 | | 60 | | 120 | | 180 | | 240 | | 300 | |
| 10 | | 70 | | 130 | | 190 | | 250 | | 310 | |
| 20 | | 80 | | 140 | | 200 | | 260 | | 320 | |
| 30 | | 90 | | 150 | | 210 | | 270 | | 330 | |
| 40 | | 100 | | 160 | | 220 | | 280 | | 340 | |
| 50 | | 110 | | 170 | | 230 | | 290 | | 350 | |
| Additional Azimuths | | | | | | | | | | | |

If a directional antenna is proposed, the requirements of 47 C.F.R. Section 73.625(c) must be satisfied. **Exhibit required.**

Exhibit No.

11. Does the proposed facility satisfy the interference protection provisions of 47 C.F.R. Section 73.623(a)? (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") ☐ Yes ☐ No

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

Exhibit No.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefor. (Applicable only if **Certification Checklist** Item 3 is answered "No.")

Exhibit No.

13. **Environmental Protection Act. Submit in an Exhibit** the following:

Exhibit No.

- a. If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R. Section 1.1311.

PREPARER'S CERTIFICATION IN SECTION III MUST BE COMPLETED AND SIGNED.

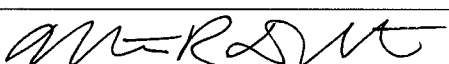
I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith. I acknowledge that all certifications and attached Exhibits are considered material representations. I hereby waive any claim to the use of any particular frequency as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and request an authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended.)

| | |
|---|--|
| Typed or Printed Name of Person Signing | Typed or Printed Title of Person Signing |
| Signature | Date |

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT
(U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT
(U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

| | | |
|--|--|----------------|
| Name Martin R. Doczkat | Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer | |
| Signature  | Date July 6, 2006 | |
| Mailing Address Cohen, Dippell and Everist, P.C., 1300 L Street, NW, Suite 1100 | | |
| City Washington | State or Country (if foreign address) DC | ZIP Code 20005 |
| Telephone Number (include area code) (202) 898-0111 | E-Mail Address (if available) cde@attglobal.net | |

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT
(U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT
(U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).