

EXHIBIT A

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of the licensee of digital LPTV Station W31FG-D, Channel 31 in Crozet, Virginia, in support of its Application for Construction Permit to specify operation from a new transmitter site.

It is proposed to mount a 12-bay elliptically-polarized slotted cylinder antenna at the 40.7-meter level of an existing 58.9-meter communications tower. The proposed effective radiated power for the facility is 15.0 kW in the horizontal plane. Exhibit B is a map upon which the predicted 51 dBu service contour is plotted. Exhibit C shows the relationship between the presently licensed W31FG-D service contour and that proposed herein. Clearly, the two service contours overlap, as required by the Commission for minor-change applications proposed by LPTV stations. In addition, the distance separating the two sites, 29.8 kilometers, is within the 48-kilometer restriction for minor-change applications. An elevation pattern for the proposed Dielectric DLP-12B/VP slotted cylinder antenna is provided in Exhibit D.

Exhibit E is a summary report from a TVStudy interference analysis for the proposed facility. Our study employed a cell size of 1.0 kilometer and increment spacing of 0.1 kilometer. Further, the applicant proposes use of a full-service mask filter. The results indicate that the proposed facility meets the Commission's interference requirements to all present and repacked full-power and low-power co-channel and adjacent-channel television facilities.

A detailed power density calculation is provided in Exhibit F.

Since no change in the overall height or location of the existing tower is proposed, the FAA has not been notified of this application. In addition, due to the diminutive height of the tower and its relation to the nearest airport runway, no FCC tower registration is required

EXHIBIT A

I declare under penalty of perjury that the foregoing statements and the attached exhibits are true and correct to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read 'K. T. Fisher', with a stylized 'K' and 'F'.

KEVIN T. FISHER

August 27, 2021





### ELEVATION PATTERN

Proposal No.

Date **17-Aug-21**

Call Letters **WCAV**

Channel **31**

Frequency **575 MHz**

Antenna Type **DLP-12B/VP**

RMS Directivity at Main Lobe

**12.3 ( 10.89 dB )**

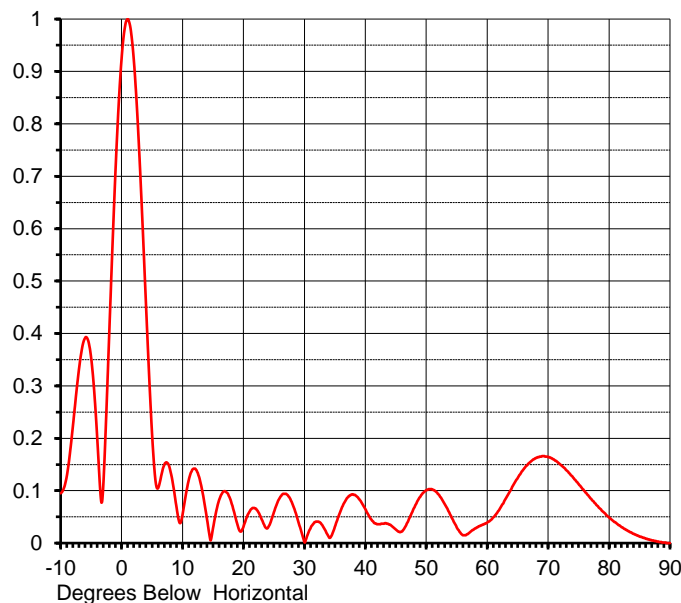
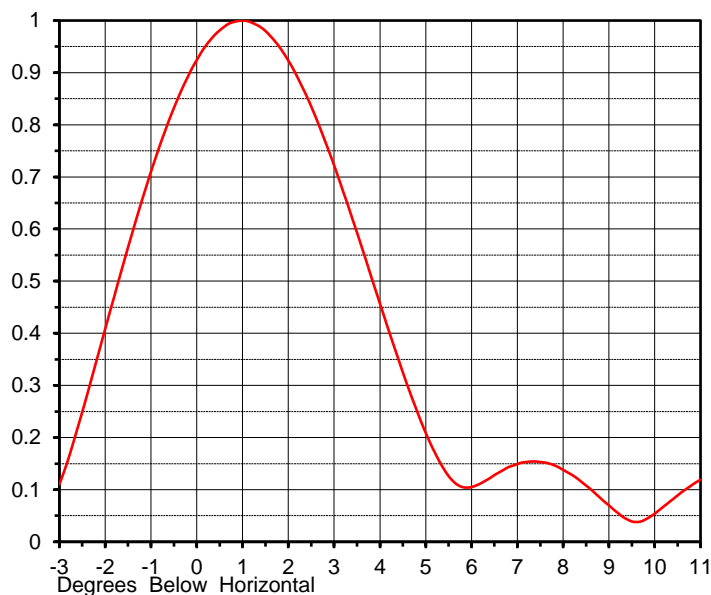
Beam Tilt **1.00 deg**

RMS Directivity at Horizontal

**10.5 ( 10.21 dB )**

Pattern Number **12L123100-31**

**Calculated**



| Angle | Field | Angle | Field | Angle | Field | Angle | Field | Angle | Field |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| -10.0 | 0.095 | 10.0  | 0.054 | 30.0  | 0.002 | 50.0  | 0.101 | 70.0  | 0.164 |
| -9.0  | 0.127 | 11.0  | 0.119 | 31.0  | 0.028 | 51.0  | 0.102 | 71.0  | 0.159 |
| -8.0  | 0.222 | 12.0  | 0.142 | 32.0  | 0.041 | 52.0  | 0.093 | 72.0  | 0.150 |
| -7.0  | 0.331 | 13.0  | 0.113 | 33.0  | 0.033 | 53.0  | 0.075 | 73.0  | 0.139 |
| -6.0  | 0.391 | 14.0  | 0.047 | 34.0  | 0.012 | 54.0  | 0.053 | 74.0  | 0.127 |
| -5.0  | 0.354 | 15.0  | 0.028 | 35.0  | 0.031 | 55.0  | 0.030 | 75.0  | 0.113 |
| -4.0  | 0.201 | 16.0  | 0.082 | 36.0  | 0.063 | 56.0  | 0.015 | 76.0  | 0.099 |
| -3.0  | 0.110 | 17.0  | 0.099 | 37.0  | 0.086 | 57.0  | 0.019 | 77.0  | 0.085 |
| -2.0  | 0.408 | 18.0  | 0.078 | 38.0  | 0.093 | 58.0  | 0.028 | 78.0  | 0.072 |
| -1.0  | 0.710 | 19.0  | 0.036 | 39.0  | 0.084 | 59.0  | 0.034 | 79.0  | 0.060 |
| 0.0   | 0.924 | 20.0  | 0.031 | 40.0  | 0.065 | 60.0  | 0.039 | 80.0  | 0.049 |
| 1.0   | 1.000 | 21.0  | 0.060 | 41.0  | 0.045 | 61.0  | 0.049 | 81.0  | 0.040 |
| 2.0   | 0.923 | 22.0  | 0.066 | 42.0  | 0.036 | 62.0  | 0.064 | 82.0  | 0.031 |
| 3.0   | 0.722 | 23.0  | 0.045 | 43.0  | 0.037 | 63.0  | 0.084 | 83.0  | 0.024 |
| 4.0   | 0.457 | 24.0  | 0.029 | 44.0  | 0.035 | 64.0  | 0.104 | 84.0  | 0.018 |
| 5.0   | 0.209 | 25.0  | 0.059 | 45.0  | 0.026 | 65.0  | 0.124 | 85.0  | 0.013 |
| 6.0   | 0.105 | 26.0  | 0.087 | 46.0  | 0.022 | 66.0  | 0.141 | 86.0  | 0.009 |
| 7.0   | 0.149 | 27.0  | 0.094 | 47.0  | 0.041 | 67.0  | 0.154 | 87.0  | 0.005 |
| 8.0   | 0.138 | 28.0  | 0.076 | 48.0  | 0.067 | 68.0  | 0.162 | 88.0  | 0.003 |
| 9.0   | 0.070 | 29.0  | 0.041 | 49.0  | 0.088 | 69.0  | 0.166 | 89.0  | 0.001 |
|       |       |       |       |       |       |       |       | 90.0  | 0.000 |

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TVSTUDY INTERFERENCE ANALYSIS RESULTS  
 PROPOSED W31FG-D  
 CHANNEL 31 – CROZET, VIRGINIA

Study created: 2021.08.27 21:04:05

Study build station data: LMS TV 2021-08-18

Proposal: W31FG-D D31 LD APP CROZET, VA

File number: BLANK0000008299

Facility ID: 182299

Station data: User record

Record ID: 1174

Country: U.S.

Build options:

Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

| IX  | Call    | Chan | Svc | Status | City, State              | File Number        | Distance |
|-----|---------|------|-----|--------|--------------------------|--------------------|----------|
| No  | WXOB-LP | N17z | TX  | CP     | RICHMOND, VA             | BPTTL20150303ACH   | 93.4 km  |
| No  | WIAV-CD | D30  | DC  | LIC    | WASHINGTON, DC           | BLANK0000133452    | 161.6    |
| Yes | WVIR-TV | D30  | LD  | APP    | CHARLOTTESVILLE, VA      | BLANK0000130293    | 55.3     |
| No  | WSVW-LD | D30  | LD  | LIC    | HARRISONBURG, VA         | BLANK0000120244    | 52.0     |
| No  | WFWG-LD | D30  | LD  | LIC    | RICHMOND, VA             | BLANK0000080886    | 93.4     |
| No  | WDBJ    | D30  | DT  | LIC    | ROANOKE, VA              | BLANK0000094109    | 171.7    |
| Yes | WETA-TV | D31  | DT  | LIC    | WASHINGTON, DC           | BLANK0000120146    | 162.5    |
| Yes | WETA-TV | D31  | LD  | CP     | WASHINGTON, DC           | BDRTEDT20090811ACE | 156.5    |
| No  | WPPX-TV | D31  | DT  | LIC    | WILMINGTON, DE           | BLCDT20031203AFL   | 361.6    |
| Yes | WGHP    | D31  | DT  | LIC    | HIGH POINT, NC           | BLANK0000116302    | 270.0    |
| No  | WFEJ-LD | D31  | LD  | CP     | NEW BERN, NC             | BLANK0000071949    | 390.9    |
| No  | WHIG-CD | D31  | DC  | LIC    | ROCKY MOUNT, NC          | BLDTL20100217AAK   | 239.7    |
| No  | W31DR-D | D31  | LD  | CP     | WILMINGTON, NC           | BNPDTL20100422AAO  | 412.9    |
| No  | WJOS-LD | D31  | LD  | CP     | POMEROY, OH              | BLANK0000054745    | 329.5    |
| No  | WTZP-LD | D31  | LD  | LIC    | PORTSMOUTH, OH           | BLANK0000074508    | 408.3    |
| No  | WYTV    | D31  | DT  | LIC    | YOUNGSTOWN, OH           | BLANK0000081168    | 388.6    |
| No  | WATM-TV | D31  | DT  | LIC    | ALTOONA, PA              | BLANK0000105303    | 287.2    |
| No  | WWBP-LP | N31+ | TX  | LIC    | FREEDOM, PA              | BLTTL20040909ABD   | 337.3    |
| No  | WLHY-LD | D31  | LD  | LIC    | Lebanon - Harrisburg, PA | BLANK0000153613    | 307.2    |

# SMITH AND FISHER

|     |         |      |        |                     |                    |       |
|-----|---------|------|--------|---------------------|--------------------|-------|
| No  | WTXF-TV | D31  | DT LIC | PHILADELPHIA, PA    | BLANK0000080320    | 361.4 |
| No  | WIIC-LD | D31+ | LD LIC | PITTSBURGH, PA      | BLANK0000001503    | 301.9 |
| No  | KDKA-TV | D31  | LD APP | PITTSBURGH, PA      | BDRTCDT20090630ADY | 220.2 |
| No  | WKTC    | D31  | DT LIC | SUMTER, SC          | BLANK0000093003    | 476.4 |
| Yes | WHRO-TV | D31  | DT LIC | HAMPTON-NORFOLK, VA | BLANK0000120642    | 218.1 |
| No  | WOAY-TV | D31  | DT LIC | OAK HILL, WV        | BLANK0000096583    | 233.9 |
| No  | WRZB-LD | D32  | LD LIC | WASHINGTON, DC      | BLANK0000024420    | 161.6 |
| No  | WBOC-TV | D32  | DT LIC | SALISBURY, MD       | BLANK0000079962    | 254.4 |
| No  | WRPX-TV | D32  | DT LIC | ROCKY MOUNT, NC     | BLANK0000081831    | 241.2 |
| No  | WCAV    | D32  | DT LIC | CHARLOTTESVILLE, VA | BLANK0000092578    | 0.0   |
| No  | WPXV-TV | D32  | DT LIC | NORFOLK, VA         | BLANK0000113419    | 220.1 |
| No  | W32EW-D | D32  | LD LIC | ROANOKE, VA         | BLANK0000058516    | 144.3 |
| No  | W33AD   | N33  | TX LIC | CONCORD, VA         | BLTTL19821108IO    | 84.2  |

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D31

Mask: Full Service

Latitude: 37 59 4.20 N (NAD83)

Longitude: 78 28 51.10 W

Height AMSL: 484.2 m

HAAT: 0.0 m

Peak ERP: 15.0 kW

Antenna: Omnidirectional

Elev Pattn: Generic

Elec Tilt: 1.00

50.4 dBu contour:

| Azimuth | ERP     | HAAT    | Distance |
|---------|---------|---------|----------|
| 0.0 deg | 15.0 kW | 339.4 m | 58.2 km  |
| 45.0    | 15.0    | 251.9   | 53.4     |
| 90.0    | 15.0    | 368.5   | 59.6     |
| 135.0   | 15.0    | 354.6   | 59.0     |
| 180.0   | 15.0    | 348.4   | 58.7     |
| 225.0   | 15.0    | 304.8   | 56.4     |
| 270.0   | 15.0    | 264.0   | 54.1     |
| 315.0   | 15.0    | 314.2   | 56.9     |

Database HAAT does not agree with computed HAAT

Database HAAT: 0 m    Computed HAAT: 318 m

Distance to Canadian border: 508.5 km

Distance to Mexican border: 2184.9 km

Conditions at FCC monitoring station: Laurel MD

Bearing: 47.2 degrees    Distance: 195.0 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 284.4 degrees    Distance: 2311.7 km

Study cell size: 1.00 km

Profile point spacing: 0.10 km

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

Maximum new IX to LPTV: 2.00%

No IX check failures found.



POWER DENSITY CALCULATION

PROPOSED W31FG-D  
CHANNEL 31 – CROZET, VIRGINIA

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Crozet facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 15.0 kW (H, V), an antenna radiation center 40.7 meters above ground, and the specific elevation pattern of the proposed Dielectric DLP-12B/VP antenna, maximum power density two meters above ground of  $0.016 \text{ mW/cm}^2$  is calculated to occur 15 meters from the base of the tower. Since this is only 4.2 percent of the  $0.38 \text{ mW/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 31 (572-578 MHz), a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.