

**Request for Waiver of Section 73.622(f)(5)**

KTVB(TV), Boise, Idaho (Facility ID No. 34858) (“KTVB”), hereby requests a permanent waiver of Section 73.622(f)(5) of the Commission’s Rules to allow the station to operate with the technical parameters described herein.

**Background**

KTVB currently provides NBC network programming on DTV Channel 7, which the station elected for post-transition digital operations in the channel election process. On June 12, 2009, KTVB terminated analog Channel 7 operations and transitioned its DTV operations from its pre-transition facility on Channel 26 to its maximized post-transition facility on Channel 7. *See* FCC File Nos. BMPCDT-20080617ADX, BLCDDT-20090612AJF.

Within hours of moving from its pre-transition UHF channel to its post-transition VHF channel, KTVB began to receive a deluge of calls from viewers that could no longer receive the station’s digital signal via their indoor antennas.<sup>1</sup> Despite attempts to walk callers through the process of resetting and/or re-scanning their equipment, station personnel were unable to resolve many indoor reception issues. Moreover, the majority of callers to KTVB’s call center were either unwilling or unable to install roof-top VHF antennas.<sup>2</sup>

To resolve the indoor reception issue, KTVB immediately requested special temporary authority to increase its power to 31.6 kW ERP, which was granted on June 24, 2009. *See* FCC File No. BDSTA-20090623ABC. On September 23, 2009, KTVB filed a request for experimental authority to operate at 42.1 kW ERP, which was granted by the Commission on October 7, 2009. *See* FCC File No. BDSTA-20090923AAJ (the “STA”).<sup>3</sup> KTVB has been operating at 42.1 kW ERP since October 7, 2009.

**Measurements**

In the STA, the Commission required KTVB to submit a report detailing the results of field strength measurements taken before and after the power increase to determine whether the power increase resolved the indoor reception issues. KTVB conducted

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<sup>1</sup> For example, between June 12 and June 19, 2009, the station’s call center fielded more than 2,000 calls from viewers encountering reception issues.

<sup>2</sup> For example, some callers stated that they would not install roof-top antennas because of the additional cost (and their ability to receive other stations’ over-the-air UHF signals), while others indicated that building restrictions in condominiums and other multiple-dwelling-units prevented them from doing so.

<sup>3</sup> KTVB took this two-step approach because, while it was technically capable of immediately increasing power to 31.6 kW ERP, it had to modify its DTV transmitter for operations at 42.1 kW ERP.

testing at 27.0 kW and 42.1 kW ERP on January 26 and 27, 2010, at fifteen locations throughout its core viewing area pursuant to the following methodology and procedures:

- KTVB used a standard indoor antenna from Radio Shack (Model #: T-749, Catalog #: 15-1874). It picked this antenna because in virtually all cases the average viewer has an off-the-shelf antenna.
- KTVB conducted its tests at fifteen locations throughout its core viewing area. Approximately two-thirds of the testing locations were at the homes of viewers who had complained that they could not receive the KTVB signal after June 12, 2009, including a number of retirement homes.
- All of the fifteen locations were within the six-county metro area of the Boise DMA as defined by Nielsen. KTVB picked locations that were within the following distances from its transmitter site: 1-12 miles, 12-24 miles, and 25 plus miles.<sup>4</sup> As demonstrated on the maps attached hereto as Attachment C, KTVB's current 27.0 kW 36 dBu contour encompasses a very large viewing area and all of the test locations are well within KTVB's core viewing area.
- The testing was conducted by KTVB's director of engineering and two of KTVB's maintenance engineers. At each location, KTVB engineers erected a portable work bench. The Radio Shack indoor antenna was clamped to the work bench and care was taken to ensure the antenna did not come into contact with any metal parts on the workbench. The antenna was connected to a spectrum analyzer and aligned to provide maximum signal strength.
- After connecting the antenna to the spectrum analyzer, the position of the spectrum analyzer in relation to the antenna was checked to ensure that movement would not affect the signal strength.
- At each location, KTVB engineers conducting the in-home signal measurements contacted KTVB engineers at the station's transmitter site to adjust the power levels to 27.0 kW and 42.1 kW ERP. The antenna was not adjusted until signal measurements had been recorded at each power level.
- The results from the spectrum analyzer were then recorded. KTVB personnel used the following spectrum analyzer: Advantest Model U3661, S/N: 120100127.

The measurements obtained from the testing are attached hereto as Attachments A and B, and conclusively demonstrate that the operation of KTVB at 42.1 kW ERP significantly resolves KTVB viewers' indoor reception issues. Attachment C contains maps of the fifteen testing locations and demonstrate that these locations are well within KTVB's core viewing area.

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<sup>4</sup> Attachment B breaks down the testing results by distance from the KTVB transmitter site.

At the fifteen locations, the indoor reception increased by an average of four dBm. This is a significant increase because for those viewers close to the “digital cliff,” an increase of only two dBm can result in a very viewable signal. More importantly, however, for many of KTVB’s core viewers, the measurements reveal that at 42.1 kW ERP, signal strength improved to better than -69 dBm, which KTVB considers to be the minimum strength necessary for an acceptable digital television signal. An average increase of four dBm is also noteworthy given the number of variables that exist in the Boise market. These variables include terrain, the large size of the market, weather, and the variety of siding used in home construction. As demonstrated in the testing results, a power increase to 42.1 kW ERP was enough to overcome these variables and provide the vast majority of KTVB’s viewers who have not been able to receive KTVB’s signal since June 12, 2009, with a robust viewable indoor signal.

### **Waiver Request**

As demonstrated in the technical exhibit appended to this application, operation of KTVB at 42.1 kW ERP will not cause any interference to any full-service or Class A low-power television station. KTVB recognizes, however, that its proposed operation at 42.1 kW ERP does not comport with the Commission’s power and antenna height limits for DTV stations operating on Channels 7-13. Accordingly, KTVB respectfully seeks waiver of Section 73.622(f)(5) so that it may permanently operate at 42.1 kW ERP.<sup>5</sup>

As discussed in its request for experimental authority, KTVB has considered other possible alternatives, including switching back to its pre-transition UHF Channel 26, but has determined, for the reasons set forth below, that remaining on Channel 7 and operating at 42.1 kW ERP is the best solution for serving the station’s viewers.

First, as discussed above, the extensive measurements taken by KTVB demonstrate that a power increase to 42.1 kW ERP dramatically resolves its viewers’ reception problems. Further, since KTVB increased its power to 42.1 kW ERP on October 7, 2009, it has not received a single complaint from a viewer regarding the station’s signal. Even operating at an increased power level of 31.6 kW ERP pursuant to the first STA from June 24 through October 7, 2009, KTVB still received calls from viewers complaining about the signal. This is significant because viewership in the Boise market is typically higher in the winter months. Thus, during the high viewership season (winter) at the higher power level (42.1 kW ERP), KTVB received no complaints. In contrast, during the low viewership season (summer) at the lower power levels (27.0 kW and 31.6 kW ERP), KTVB was deluged with complaints. The lack of complaints during the winter months is anecdotal evidence that KTVB’s operation at 42.1 kW ERP is necessary for the station to ensure continued service to its core viewers.

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<sup>5</sup> As noted in its maximization application, KTVB’s 27 kW ERP facility already exceeds the maximum ERP established in Section 73.622(f)(7).

Second, Boise residents are unusually dependent on over-the-air broadcasting. Two market research companies, Nielsen and Leigh Stowell, have determined that between 25% and 31% of the Boise DMA relies on over-the-air signals to receive television programming. In light of this pervasive reliance on over-the-air reception, the public in the Boise DMA possesses a keen interest in its ability to successfully tune to KTVB to receive emergency information, the station's top-rated local news programs, and NBC network programming.

Third, the Boise DMA is very large (32,735 square miles), and KTVB serves distant rural areas through 19 translators. Although VHF signals are not as effective as UHF signals with respect to penetrating walls and providing reception to indoor antennas, VHF signals are able to reach farther than UHF signals. Accordingly, VHF Channel 7 is much better suited than a UHF channel for feeding KTVB's translators.

Fourth, KTVB's pre-transition Channel 26 digital operation utilized a directional antenna. KTVB's current Channel 7 operation utilizes an omni-directional antenna and provides a much larger service area than is possible with the Channel 26 directional antenna. Thus, in order to maintain its current service area, KTVB would have to incur the significant expense of purchasing a new omni-directional antenna for Channel 26. In addition, KTVB would have to purchase a new transmitter to accommodate the higher power necessary for a Channel 26 operation to cover the same area as the current Channel 7 operation.

Fifth, operation on VHF Channel 7 requires far less power consumption than operation on a UHF channel. The power utility cost of operating a UHF channel is about \$4,000 more per month than operating a VHF channel, resulting in an additional expense of \$48,000 per year. For KTVB, this expense is the equivalent of the salaries for two full-time photographers.

Finally, returning to Channel 26 or moving to another UHF channel would require a massive educational effort on the part of KTVB to make over-the-air viewers aware of the need to once again rescan their TVs and converter boxes. Unlike the June 12 educational effort, KTVB would be all alone in this effort, and thus would bear the cost all on its own.

For these reasons, KTVB respectfully requests that the Commission waive the maximum power and height restrictions set forth in Section 73.622(f)(5) of its Rules to permit the station to operate at 42.1 kW ERP on a permanent basis.

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ATTACHMENT A

**RADIO SHACK INDOOR ANTENNA:**

Way Point	Site Name	City	Date	Type of Capture	Location Type	Latitude	Longitude	Distance and Bearing of TX (M)	Siding	Weather Conditions	Data Captured by	dBm Indoor Antenna @ 27 kW	dBm Indoor Antenna @ 42.1 kW	dBm Improve from 27.0 kW to 42.1 kW
1	Valley View Retirement	Boise	1/27/10	lobby	metro-city	43-36-55.4	116-15-56.4	12 @ 40	Brick	Partly	Beau	-68	-64	4
2	Villas at River Place	Boise	1/27/10	lobby	metro-city	43-35-16.6	116-10-26.0	12 @ 18	Wood	Sunny	Beau	-68	-62	6
3	KTVB Office 1	Boise	1/27/10	office	metro-city	43-37-06.8	116-14-53.3	12 @ 38	Brick	Sunny	Beau	-72	-68	4
4	Carla Van Hoogen	Boise	1/27/10	residence - grnd	metro-city	43-35-07.1	116-10-15.2	12 @ 19	Brick	Partly	Beau	-61	-58	3
5	Richard Strack	Boise	1/27/10	residence - grnd	metro-city	43-33-41.8	116-18-34.2	17 @ 39	Wood	Sunny	Beau	-66	-62	4
6	Plantation Place	Garden City	1/27/10	lobby	metro-city	43-39-23.5	116-15-50.3	11 @ 40	Stucco	Sunny	Beau	-71	-67	4
7	Spring Creek Manor	Eagle	1/26/10	lobby	metro-county	43-42-07.8	116-21-14.8	13 @ 63	Vinyl	Sunny	Beau	-61	-59	2
8	Sunbridge Rehabilitation	Meridian	1/26/10	guest room grnd	metro-county	43-36-36.5	116-24-43.5	18 @ 58	Wood	Sunny	Beau	-69	-64	5
9	Lowell Lauber	Meridian	1/26/10	residence - grnd	metro-county	43-37-04.7	116-26-11.7	19 @ 60	Wood	Sunny	Beau	-63	-61	2
10	Dave Strahm	Kuna	1/26/10	residence - grnd	metro-county	43-25-53.25	116-20-00.3	25 @ 28	Vinyl	Sunny	Beau	-60	-59	1
11	Park Place Assisted Living	Nampa	1/26/10	guest room grnd	metro-rural	43-34-54.8	116-32-49.9	25 @ 60	Brick	Sunny	Beau	-61	-57	4
12	Autumn Wind	Caldwell	1/26/10	guest room grnd	metro-rural	43 38 34.2	116 42 00.1	31 @ 75	Vinyl	Sunny	AJ & Beau	-72	-69	3
13	AJ Caiola	Caldwell	1/26/10	residence - grnd	metro-rural	43-40-51.7	116-40-08.7	29 @ 80	Vinyl	Sunny	AJ	-62	-60	2
14	Beau Stenkamp	Boise	1/27/10	residence - grnd	metro-rural	43-42-16.4	116-37-22.4	26 @ 82	Wood	Sunny	AJ & Beau	-61	-58	3
15	Joyce Johnson	New Plymouth	1/26/10	residence - grnd	metro-rural	43-58-25.8	116-49-16.6	39 @ 113	Vinyl	Sunny	AJ & Beau	-95	-86	9
<b>averages</b>												-67	-63	4

ATTACHMENT B

**RADIO SHACK INDOOR ANTENNA:**

Way Point	Site Name	City	Date	Type of Capture	Location Type	Latitude	Longitude	miles from transmitter	Siding	Weather Conditions	Data Captured by	dBm Indoor Antenna @ 27 kW	dBm Indoor Antenna @ 42.1 kW	dBm Improve from 27.0 kW to 42.1 kW
<b><u>1-12 miles from Transmitter</u></b>														
6	Plantation Place Asst Liv	Garden City	1/27/10	lobby	metro-city	43-39-23.5	116-15-50.3	11	Stucco	Sunny	Beau	-71	-67	4
1	Valley View Retirement	Boise	1/27/10	lobby	metro-city	43-36-55.4	116-15-56.4	12	Brick	Partly	Beau	-68	-64	4
2	Villas at River Place	Boise	1/27/10	lobby	metro-city	43-35-16.6	116-10-26.0	12	Wood	Sunny	Beau	-68	-62	6
3	KTVB Office 1	Boise	1/27/10	office	metro-city	43-37-06.8	116-14-53.3	12	Brick	Sunny	Beau	-72	-68	4
4	Carla Van Hoogen	Boise	1/27/10	residence - grnd	metro-city	43-35-07.1	116-10-15.2	12	Brick	Partly	Beau	-61	-58	3
7	Spring Creek Manor	Eagle	1/26/10	lobby	metro-county	43-42-07.8	116-21-14.8	13	Vinyl	Sunny	Beau	-61	-59	2
Average 1-15 miles												<b>-67</b>	<b>-63</b>	<b>4</b>
<b><u>12-24 miles from Transmitter</u></b>														
5	Richard Strack	Boise	1/27/10	residence - grnd	metro-city	43-33-41.8	116-18-34.2	17	Wood	Sunny	Beau	-66	-62	4
8	Sunbridge Rehabilitation	Meridian	1/26/10	guest room grnd	metro-county	43-36-36.5	116-24-43.5	18	Wood	Sunny	Beau	-69	-64	5
9	Lowell Lauber	Meridian	1/26/10	residence - grnd	metro-county	43-37-04.7	116-26-11.7	19	Wood	Sunny	Beau	-63	-61	2
10	Dave Strahm	Kuna	1/26/10	residence - grnd	metro-county	43-25-53.5	116-20-00.3	25	Vinyl	Sunny	Beau	-60	-59	1
Average 13-24 miles												<b>-65</b>	<b>-61</b>	<b>4</b>
<b><u>25-40 miles from transmitter</u></b>														
11	Park Place Assisted Living	Nampa	1/26/10	guest room grnd	metro-rural	43-34-54.8	116-32-49.9	25	Brick	Sunny	Beau	-61	-57	4
14	Beau Stenkamp	Boise	1/27/10	residence - grnd	metro-rural	43-42-16.4	116-37-22.4	26	Wood	Sunny	AJ & Beau	-61	-58	3
12	Autumn Wind Retirement	Caldwell	1/26/10	guest room grnd	metro-rural	43 38 34.2	116 42 00.1	31	Vinyl	Sunny	AJ & Beau	-72	-69	3
13	AJ Caiola	Caldwell	1/26/10	residence - grnd	metro-rural	43-40-51.7	116-40-08.7	29	Vinyl	Sunny	AJ	-62	-60	2
15	Joyce Johnson	New Plymouth	1/26/10	residence - grnd	metro-rural	43-58-25.8	116-49-16.6	39	Vinyl	Sunny	AJ & Beau	-95	-86	9
Avergae 25+ miles												<b>-70</b>	<b>-66</b>	<b>4</b>

# ATTACHMENT C



