



**STATEMENT OF JOHN E. HIDLE, P.E.
IN SUPPORT OF AN APPLICATION FOR A
MINOR MODIFICATION OF LICENSE,
FILE NUMBER BLEDT-20120719ABH,
TO SUBSTITUTE A NON-DIRECTIONAL ANTENNA, A
DIELECTRIC MODEL TFU-32GTQ/VP-R 08 BB ANTENNA,
FOR ITS AUTHORIZED DIRECTIONAL ANTENNA
A DIELECTRIC MODEL TAD-UDC-3-21
KAID - BOISE, IDAHO
CH. 21 - 603kW - 859 meters HAAT**

Prepared for: STATE BOARD OF EDUCATION, STATE OF IDAHO

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Licensed Professional Engineer in the Commonwealth of Virginia, No. 7418, and in New York State, No. 63418.

GENERAL

This office has been authorized by STATE BOARD OF EDUCATION, STATE OF IDAHO, licensee of KAID, channel 21, licensed to Boise, Idaho, to prepare this statement, FCC Form 2100, Schedule A, its technical sections, and the associated exhibits in support of an application for a minor modification to its license, file number BLEDT-20120719ABH.

The licensed facility is a four site Distributed Transmission System which consists of three relatively low-power transmitter sites and a fourth full-power site located at KAID's DTS reference coordinates. The three low-power site locations were chosen to provide adequate signal levels in locations known to experience detrimental signal attenuation due primarily to terrain blockages, as well as fading and/or other such problems. All three sites and their coverage areas are located wholly within the authorized DTS service area.

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The proposed minor modification of KAID's DTS facility is limited to the substitution at site 4 of a new Dielectric model TFU-32GTQ/VP-R O8 BB non-directional transmitting antenna in lieu of its authorized antenna, a directional Dielectric model TAD-UDC-3-21, a reduction in Effective Radiated Power (ERP) from 725 kW to 603 kW and a slight reduction in HAAT of 3.5 meters to accommodate the new antenna. The substitute antenna is designed to additionally accommodate two other full-power DTV facilities and one Low-Power DTV facility that are already located at the site. Another station, KBOI-TV, channel 20, also assigned to Boise, already has a construction permit, file number 0000226094, that authorizes the proposed KAID substitute antenna's installation for KBOI-TV's use.

Once authorized KAID will utilize the proposed substitute elliptically polarized antenna with its center of radiation at a height above ground of 90 instead of 93.5 meters, and a height above average terrain of 859 meters. The antenna's horizontal azimuth radiation patterns for both its horizontally and vertically polarized components and its vertical elevation pattern, showing its radiation characteristics above and below the horizontal plane are shown and tabulated in the antenna exhibit.

The proposed substitution of a non-directional antenna for a directional antenna, will necessarily extend the coverage of the station toward the area where the directional antenna's signal suppression occurs. In this instance the DTS facility's coverage area wholly depends on the noise-limited contour of its site 4 facility. Such an extension of coverage area might be seen to be in conflict with Section 73.626 however Section 73.622(f)(5) can be applied since there is a larger station in geographic area assigned to the Boise, Idaho market. .

DETERMINATION OF THE “LARGEST STATION IN THE MARKET”

It appears from an analysis of the stations that are licensed to communities located in the Boise, Idaho Designated Market Area (DMA) that the largest station in geographic area is the KTVB, license file number BLCDT-20100628AVP, for channel 7, Boise, Idaho with a predicted 36 dBu noise limited contour coverage area of 55,497.0 square kilometers. The instant application to modify KAID's channel 21 license to substitute a different antenna with an ERP of 603 kW results in a predicted 39.46 dBu noise limited contour coverage area of 55,341.8 square kilometers. As shown in the coverage exhibits the proposed coverage extension will result in a gain of more than 6,000 additional viewers while no existing viewer would be lost. Therefore, according to Section 73.622(f)(5), KAID is entitled to the requested channel 21 facility and its expanded coverage area.

ALLOCATION CONSIDERATIONS

Post-Transition DTV Considerations

A study was performed, using the FCC's software, *tvstudy* v2.2.5, to determine that the instant proposal is predicted to cause no new prohibited interference to DTV stations, construction permits or DTV allotments. The study results confirm no new interference is predicted to more than 0.5% to the populations served by any full-power DTV station, construction permit or allotment. See Appendix B.

PREDICTED COVERAGE CONTOURS

The predicted coverage contours were calculated in accordance with the method described in Section 73.625(b) of the Rules, utilizing the appropriate F(50,90) propagation

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curves (47 CFR Section 73.699, Figure 9), proposed Effective Radiated Power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the NED Three Second US Terrain Database as permitted in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. The map exhibit shows the predicted Noise Limited (39.46 dBu) contour, and the principal community (48 dBu) contour which completely encompasses the principal community of license, Boise, Idaho.

BLANKETING AND INTERMODULATION INTERFERENCE

Other broadcast and non-broadcast facilities are either co-located with, or located within 10 kilometers of the KAID site. The applicant does recognize its responsibility to remedy complaints of interference that might result from this proposal in accordance with applicable Rules.

RADIO FREQUENCY IMPACT, SAFETY & STATEMENT OF COMPLIANCE

The licensee of KAID is committed to the protection of station personnel and/or tower contractors working in the vicinity of the KAID antenna and will reduce power or cease operation, when necessary, to ensure protection to personnel.

As shown in Appendix A the KAID channel 21 facility, as proposed herein, will operate with a maximum ERP of 603 kW from an elliptically polarized non-directional transmitting antenna with a centerline height of 90 meters above ground level (AGL). Considering the elevation pattern provided elsewhere in this submission, the vertical plane relative field factor is less than 0.165 at all depression angles greater than 7 degrees. The

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proposed KAID channel 21 facility is predicted to produce a worst-case power density at two meters above ground level, at 32.0 meters from the tower base, of $65.39 \mu\text{W}/\text{cm}^2$, which is 19.05% of the FCC guideline value of $343.33 \mu\text{W}/\text{cm}^2$ for an "uncontrolled" environment, and 3.81% of the FCC's guideline value for "controlled" environments.

Since the proposed facility's worst-case predicted power density would exceed 5% of the uncontrolled environment at one location less than 25 meters from the support tower base the proposal does not qualify for treatment pursuant to Section 1.1307(b)(3) of the FCC Rules. Even so, the applicant believes that only one isolated location within the restricted boundary of the common site with predicted power density of 19.05% of the "uncontrolled" public exposure guideline can in no known or imagined situation present danger to anyone that would be authorized to have access to the restricted site.

However, the applicant is prepared, if required, to make on-site measurements in conjunction with other occupants of the site. Further, the Applicant will continue to cooperate/coordinate with other site users and reduce power and/or cease operation during times of service or maintenance of the transmission systems as necessary to avoid potentially harmful exposure to personnel.

SUMMARY

It is submitted that the instant application for a minor modification of KAID's channel 21 license, file number BLEDT-20120719ABH, to substitute a non-directional elliptically polarized antenna for its authorized antenna as described herein, complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement was prepared by me, or under my direct supervision, and its contents are

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believed to be true and correct to the best of my knowledge and belief.

DATED: April 8, 2024

