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# MBC GRAND BROADCASTING COMPANY, INCORPORATED

## LICENSEE OF

## K25FZ CHANNEL 25

## GRAND JUNCTION, COLORADO

## FCC FACILITY ID # 70103

## APPLICATION FOR A

## DIGITAL FLASH CUT FOR K25FZ ON CHANNEL 25

## ENGINEERING EXHIBIT 12

**May 18, 2010**

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**GRAND JUNCTION, COLORADO**

**APPLICATION FOR A CONSTRUCTION PERMIT FOR**

**A DIGITAL FLASH CUT FOR K25FZ ON CHANNEL 25**

**FOR GRAND JUNCTION, CO**

**EXHIBIT 12**

There are no directional AM stations within 3.2 km, nor any non-directional AM stations within 0.5 km of the proposed MBC Grand digital LPTV on Channel 25 transmitter site. The instant application is excluded under 1.1306. There are no physical changes proposed to the existing pre 1986 tower or immediate surrounding area. The proposed replacement translator is located at a multi-user site.

Using the procedures outlined in OET Bulletin 65, Edition 97-01 and specifically Appendix A, Table 1 and Equation 10, Page 21, I have evaluated the RFR energy from the antenna system of K25FZ (CH 25) as follows:

K25FZ **(CH 25):** K25FZ, Channel 25 is proposing a flash cut to digital LPTV station on Channel 25 and utilizing an ERP of 15.0 kilowatts average digital power with a directional antenna and horizontal polarization. The proposed Channel 25 transmitting antenna is a high

gain unit with an elevation power gain of at least 8x side mounted with a C/R 40 meters up the tower.

K25FZ CH 25 is not the only facility at this general location required to be considered by 47 CFR 1.1307(b). However, as shown below, K25FZ CH 25 will contribute less than 5% of the allowable RFR energy to persons on the ground and outside the secured and marked tower structure.

K25FZ CH 25 is proposing to operate on Channel 25 utilizing a maximum ERP of 15.0 kilowatts average power with a directional antenna and horizontal polarization. From the manufacturer's data sheets, the Channel 25 Andrew ALP-8 transmitting antenna is a high gain unit with an elevation power gain of 8x side mounted with a C/R 40 meters up the tower. With the resulting elevation gain, the RFR energy at all angles below 10 degrees below horizon are expected to be at least 20 dB below that of the main lobe. Utilizing Appendix A, Table 1 the maximum occupational/controlled exposure level at CH 25 is 1.8 $mW/cm^2$. Using Equation 10, Page 21 of OET-65, the distance to the 1.8 $mW/cm^2$ contour is 1.7 meters. For general population/uncontrolled environment the maximum exposure level is 360 $uW/cm^2$. Again using Equation 10, the calculated distance to the 360 $uW/cm^2$ contour is 3.7 meters. Since the base of the antenna is approximately 38 meters above the ground, the height of the structure limits the possible excessive radiation values to at least 34.0 meters above the ground.

Again using Equation 10, the predicted RFR energy levels at 2 meters above ground is calculated at 3.9 $uW/cm^2$ or 1.1% of the FCC allowable for the general public/uncontrolled environment per FCC OET-65.

**CONCULSIONS ON RFR ANALYSIS**

Therefore the level of RFR energy from proposed K25FZ digital at all points on the ground are below that required for protection of both the employees and the general public as

required by ANSI 95.1-1992 or FCC OET 65, Edition 97-01. Since K25FZ is calculated to produce less than 5% of the OET-65 levels anywhere that the general public or untrained individuals can have access, K25FZ facility is exempt from RFR requirements as to the sum of any other contributions from this site.

At those locations where RFR energy fields in excess of FCC guidelines are predicted to be encountered (up on the tower and very near the station's transmission antenna), signs and protective devices secure the area affected from the general public. With respect to direct employees of this licensee, OSHA RFR guidelines will be observed. Contractors and other outside workers potentially exposed to such areas on the tower shall be advised of the hazard by posted notices or other means. The station will reduce power or cease operation, if necessary, in order to protect workers on the tower.

With these procedures in place, we believe the proposed digital K25FZ operation is in compliance with the RFR energy requirements of 47 CFR 1.1307(b).