



Engineering Statement

**Construction Permit Application for Minor Modification
KWJM-LD
Rochester, MN
FCC Facility ID # 184632
RF Channel 15**

November 26, 2020

This Engineering Statement has been prepared on behalf of DTV America Corporation (DTVAC), licensee of Low Power Digital Television Station KWJM-LD at Rochester, MN. The statement was prepared in support of a Construction Permit Application for changes to the facility as described below.

The station currently operates on channel 15 and is proposing to change its antenna make and model. Therefore, DTVAC is filing a construction permit application seeking authorization to construct facilities utilizing the new parameters as listed below.

The parameters of the proposed facility are as follows:

Proposed Parameters:

Transmitter Location:	44-58-34.0 N 093-16-21.0 W (NAD 83)
Channel:	15
ERP:	15.0 KW
Emission Mask:	Full Service
Antenna Pattern:	Custom Directional
Antenna Manufacturer:	Kathrein
Antenna Model:	4X3 750 0000044 (Panel)
Antenna RCAGL:	250.0 Meters
Overall Structure AGL:	270.1 Meters
RCAMSL	510.3 Meters



Interference Study:

An interference study was undertaken utilizing the FCC's TVStudy program to analyze the co-channel and adjacent channel interference scenarios for the proposed facility parameters.

The results of the study indicated that no impermissible interference to other stations would result from the proposed operations.

Based upon the forgoing interference study, it is believed that the proposed facility can operate without any impermissible interference to other stations.

To the extent that the proposed facility would receive interference from other stations, the licensee will agree to accept the incoming interference that results from its proposal.

RF Exposure Study:

Furthermore, a study was conducted to determine compliance with the RF Radiation Maximum Permissible Exposure (MPE) limits of the proposed operation. The study was conducted using the methodology outlined in the FCC's OET Bulletin 65 regarding RF Radiation Compliance.

The study utilized the proposed antenna height of 250.0 meters AGL and a reference height of 2 meters AGL for the reference location. This yields a distance from the antenna of 248.0 meters.

The proposed antenna elevation pattern indicates that the downward radiation from the antenna from 45° to 90° below horizontal has a maximum relative field value of 0.1. This value was used in conjunction with the distance from the antenna and the prescribed formula from OET Bulletin 65 to determine a maximum predicted power density of $0.82\mu\text{W}/\text{cm}^2$ at 2 meters above ground level near the base of the tower. The Maximum Permissible Exposure Level (MPE) for the Uncontrolled/General Population environment for Channel 15 is approximately $319.33\mu\text{W}/\text{cm}^2$. Thus, the proposal is approximately 0.26% of the General Population MPE level and within the allowable limit.

Based upon the forgoing it is believed that the proposed facility is in compliance with the required RF exposure limits.

The licensee and all station personnel and contractors are required to follow appropriate safety procedures before the commencement of any work on the tower or in close proximity to the antenna. These procedures including reducing power or turning off the transmitter before any work is undertaken at the site. The licensee in coordination with



any other users of the site must reduce power or cease operations as necessary to ensure workers having access to the site, tower, and antenna locations are not exposed to RF Radiation levels in excess of those prescribed by FCC Guidelines.

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