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Engineering Statement

Construction Permit Application for Minor Modification
KZMM-CD
Fresno, CA
FCC Facility ID # 18740
RF Channel 35

November 23, 2020

This Engineering Statement has been prepared on behalf of HC2 Station Group, Inc. (HC2), licensee of Class A Digital Low Power Station KZMM-CD at Fresno, CA. 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 35 and is proposing to change its antenna make and model as well as antenna pattern at its transmitter existing site. Therefore, HC2 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:	37-04-19.1 N 119-25-52.5 W (NAD 83)
Channel:	35
ERP:	15.0 KW
Emission Mask:	Full Service
Antenna Pattern:	Omnioid
Antenna Manufacturer:	PSI
Antenna Model:	OI
Antenna RCAGL:	30.0 Meters
Overall Structure AGL:	75.6 Meters
RCAMSL	1385.1 Meters

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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.

It is requested that processing of the application utilize the following parameters for processing and TVStudy analysis:

Study Cell Size:	1.0 KM
Profile Point Spacing:	0.10 KM

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 30.0 meters above ground level and a reference height of 2 meters above the ground for the reference location. This yields a distance from the antenna of 28.0 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 0.10. 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 63.9μW/cm² at 2 meters above the ground level near the base of the antenna support tower. The Maximum Permissible Exposure Level (MPE) for the Uncontrolled/General Population environment for Channel 35 is approximately 399.33μW/cm². Thus, the proposal is approximately 16.0% of the Uncontrolled Environment / General Population MPE level. Hence, the proposal is within the allowable MPE limits.

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Because the antenna is located in a locked and fenced compound with other communications electronics, it is believed that no access by the general public or access by persons not having occupational RF safety training will be possible. Further, the licensee will post signage as appropriate on the fenced compound regarding the RF compliance procedures.

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 rooftop 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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