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Engineering Statement

Displacement of K43MQ-D
Proposed Channel 23 at Moon Ranch, New Mexico
May 4, 2018

This Engineering Statement has been prepared on behalf of the Regents University of New Mexico (RUNM), licensee of Digital TV Translator Station K43MQ-D at Moon Ranch, New Mexico. The statement was prepared in support of a Displacement Channel Window Filing for facilities as herein proposed.

The translator currently operates on channel 43, which is outside of the new post-incentive auction core television spectrum. Consequently, the licensee must cease its operations on channel 43 in order to clear the spectrum in the area to enable the commencement of wireless operations in the band prior to the completion of the Post-Incentive Auction Repacking.

The licensee proposes to move its operations to channel 23.

The parameters of the proposed facility are as follows:

Proposed Parameters:

Transmitter Location:	35-03-04.1 N 104-56-35.4 W (NAD 83)
Channel:	23
ERP:	0.56 KW
Emission Mask:	Stringent Service
Antenna Pattern:	Custom Directional
Antenna Manufacturer:	Scala
Antenna Model:	PR-TV-ARRAY
Antenna RCAGL:	12.1 Meters
Overall Structure AGL:	15.2 Meters
RCAMSL	1725.0 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 new proposed channel of operation.

The results of the study indicated that no impermissible interference 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.

RF Exposure Study:

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 12.1 meters AGL and a reference height of 2 meters AGL for the reference location. This yields a distance from the antenna of 10.1 meters.

The proposed antenna elevation pattern indicates that the downward radiation from the antenna from 20° 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 18.34μW/cm² 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 23 is approximately 351.3μW/cm². Thus, the proposal is approximately 5.2% of the General Population MPE level and well within the allowable limit. It is noted that other existing radiators at the site are anticipated to remain unchanged and therefore the total contribution to permissible exposure remains essentially unchanged at this site.

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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