

**EXHIBIT 1
TECHNICAL CERTIFICATION
RE: ENVIRONMENTAL EFFECT**

The Applicant seeks FCC authority to change K25MK-D's transmitting antenna system. The antenna structure to be utilized is an existing pole, which is 5 meters in overall height. Because the criteria in 47 CFR § 1.1307(a) does not generally encompass the collocation of antennas on existing structures of 6.1 meters or less in height, this application does not appear to warrant additional environmental processing. With regard to the requirements concerning human exposure to radio-frequency (RF) energy in 47 CFR § 1.1307(b), this proposal is not expected to result in ground-level exposure in excess of the FCC guidelines as described below.

The transmitter location is situated on a secluded mountaintop where there are no inhabitants or populated areas nearby. This location is known as the Porcupine Mountain Electronic Site, which is a designated communications area that is administered by the U.S. Forest Service. Access to the site is via a narrow unpaved single-lane road that climbs to the mountaintop over very steep and rugged terrain. At the top of the mountain the road splits into two driveways, one that goes to the K25MK-D site and another that leads to an adjacent area where other communication facilities are located. Therefore, the Applicant believes the site is not accessible to the general public.

The maximum permissible exposure (MPE) limit for Channel 25 as set forth in 47 CFR § 1.1310 for areas not accessible to the general public is 1,787 $\mu\text{W}/\text{cm}^2$. As shown in Figure 1, the antenna specified for K25MK-D is calculated to produce a maximum ground-level exposure of 559.83 $\mu\text{W}/\text{cm}^2$ at a horizontal distance of 2.25 meters from the antenna



structure. This determination was derived from Equation 10 of OET Bulletin 65, which is shown below.¹

$$S = \frac{33.4 (F^2) ERP}{R^2}$$

Where: S = power density in $\mu\text{W}/\text{cm}^2$
F = relative field factor
ERP = power in watts
R = distance in meters

Relative field data provided by the antenna manufacturer was used to determine the ground-level exposure values plotted on [Figure 1](#).

The other RF sources at the site are co-owned broadcast stations K19FD-D, K21GE-D, K23FZ-D, K30OI-D and K32ME-D, which are all licensed to serve Camp Verde. Using the same methodology described above, the ground-level exposure contribution from each station was calculated. [Figure 2](#) is a plot of the combined results for all of the above contributors, which shows ground-level exposure is not anticipated to exceed the aforementioned MPE-based limit. Considering that the requirements for signage and access control will be implemented as appropriate for compliance with the new rules adopted in the RF Report and Order, no further showing of compliance with the RF exposure rules is necessary.²

All persons authorized to access the site, supporting-structure or antenna will be protected from excessive exposure to RF fields in accordance with the methods recommended in OET Bulletin No. 65. The station will also reduce power or cease operation

¹ FCC Office of Engineering and Technology, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, Edition 97-01 (1997) (OET Bulletin 65).

² *Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields; Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies*, ET Docket No. 19-226, Resolution of Notice of Inquiry, Second Report and Order, Notice of Proposed Rulemaking, and Memorandum Opinion and Order, 34 FCC Rcd 11687 (2019) (*RF Report and Order*).



in coordination with other site users. For all of the reasons stated above, this minor change application has been found to comply with the criteria in 47 CFR § 1.1307(a) and (b) and thus further environmental processing is not required in accordance with 47 CFR § 1.1306.

Respectfully submitted,

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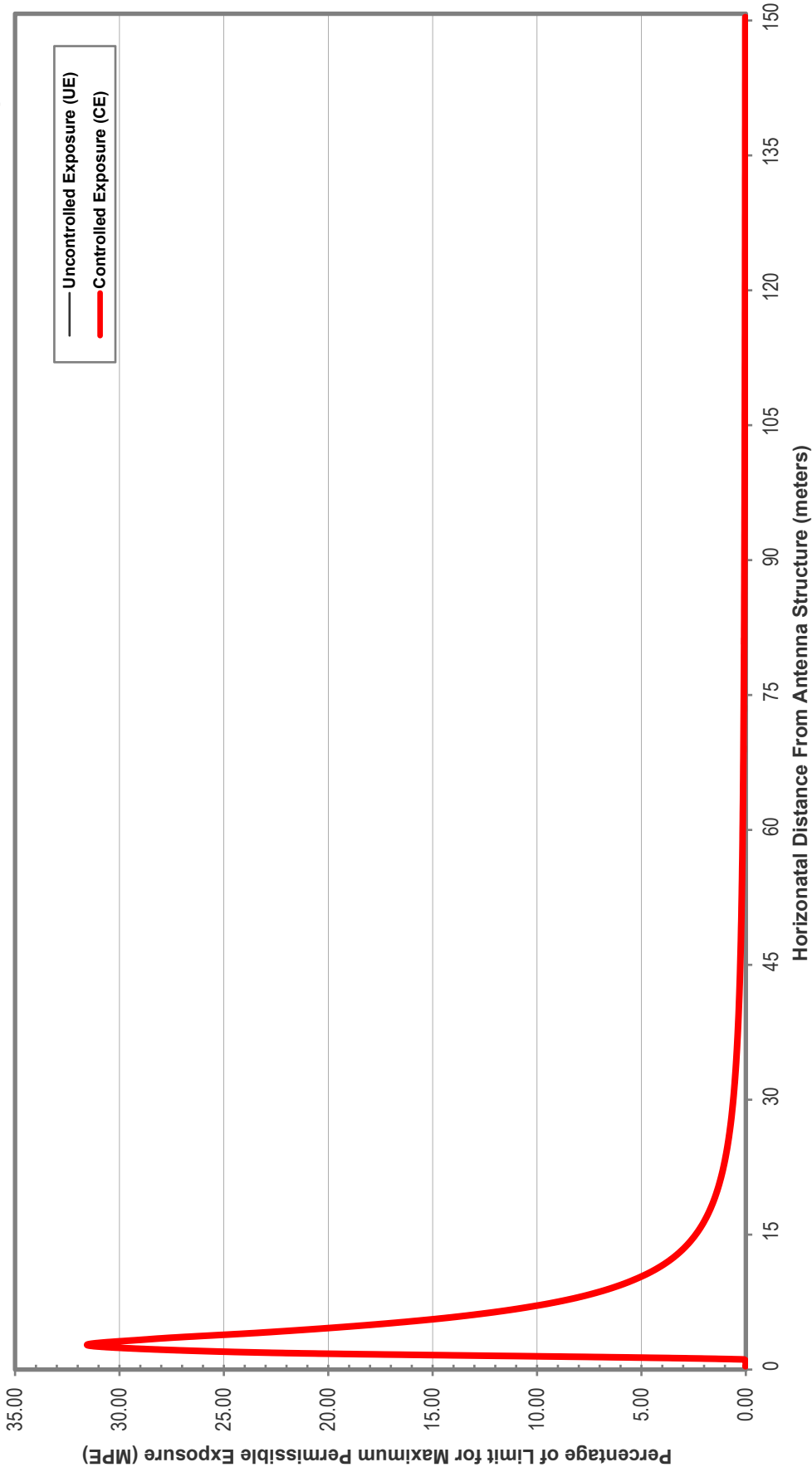
May 5, 2023

List of Attachments

Figure 1 – Ground-Level Exposure from K25MK-D
Figure 2 – Ground-Level Exposure from All Sources

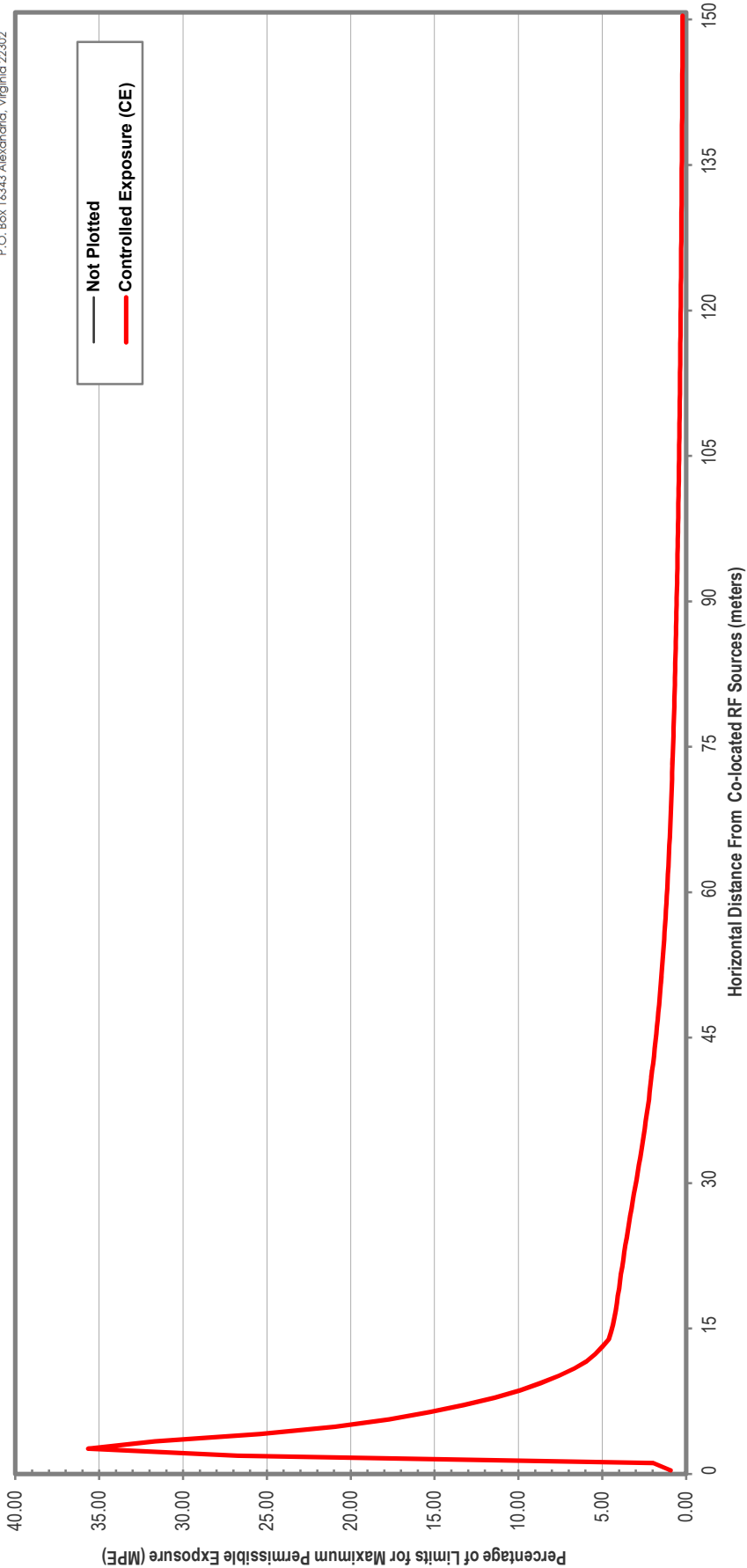
ESTIMATED GROUND LEVEL EXPOSURE

(FCC OET Bulletin 65, ed. 97-01, Prediction Methodology)



STATION INFORMATION		ANTENNA TYPE		ANALYSIS PARAMETERS		MPE LIMITS ($\mu\text{W}/\text{cm}^2$)	
Call Sign:	K25MK-D	Make & Model:	SCA CL-1469B	FM antenna elements:		General / UE:	N/A
Location:	Camp Verde, AZ	Vertical pattern / equivalent:	SCA_CL-1469	>> Element spacing(λ):		Occupational / CE:	1,787
Service:	LD	SITE DESCRIPTION		Total avg power (W):	287	COMPLIANCE SUMMARY	
Frequency(MHz):	536			Antenna RCAGL(m):	3.7		
(P)peak or (A)vg pwr:	A			Exposure ht. AGL(m):	2		
ERP in Watts (H+V):	287			Ground reflection factor:	2.56		
TV Aural ERP(%):		UE compliance shown:	No	Isotropic factor:	1.64	Peak power density ($\mu\text{W}/\text{cm}^2$):	559.83
Radial (°):	All	Slope (m):	0	>> Resultant multiplier	33.41	>> Horizontal distance(m):	2.25
						Percentage of UE limit:	N/A
						Percentage of CE limit:	31.33%

PREDICTED GROUND LEVEL EXPOSURE
(Pursuant to FCC OET Bulletin 65, ed. 97-01)



CO-LOCATED RF SOURCES				ANTENNA TYPES		FACILITIES		COMPLIANCE SUMMARY	
Call sign	City, State	Shvc	Ch.	Make & Model or Equivalent	ERP H&V	ROAGL	UE Limit (µW/cm²)	CE Limit (µW/cm²)	2.3 m Dist.
K25MK-D	Camp Verde, AZ	LD	25	SCA CL-1469B	0.287 kW	3.7 m	N/A	1,787	31.334%
K19FD-D	Camp Verde, AZ	LD	19	KAT K72314	0.5 kW	9.75 m	N/A	1,667	0.526%
K21GE-D	Camp Verde, AZ	LD	21	KAT K72314	0.5 kW	9.75 m	N/A	1,707	0.513%
K23FZ-D	Camp Verde, AZ	LD	23	KAT K72314	1.0 kW	9.75 m	N/A	1,747	0.440%
K30OI-D	Camp Verde, AZ	LD	30	KAT 75010210	0.122 kW	4.5 m	N/A	1,887	1.146%
K32ME-D	Camp Verde, AZ	LD	32	KAT 75010210	0.122 kW	4.5 m	N/A	1,927	1.706%
All Users	Azimuthal Direction:	All					Worst Case UE:	0.000%	Worst Case CE: 35.665%