

Environmental Effects

The facility is located at the apex of a hill. The closest significant rise in terrain is 506 meters from the proposed site. The closest residence is 327 meters north of the site, at an elevation 3 meters lower than the base of the tower. There are other significant emitters of radio frequency energy in the area. The transmitter and tower are enclosed with a locked chain-link fence. The site is located on a private site which is patrolled on a regular basis. Access to the site is available only to authorized technical and maintenance personnel by the unimproved private road.

Page three of this Exhibit is a printout from the Commission's FM Model for Windows software for the licensee's FM antenna. As shown, at ground level RF exposure will be less than $25 \mu\text{W}/\text{cm}^2$, or 12.5% of the general population/uncontrolled exposure limit of $200 \mu\text{W}/\text{cm}^2$ and 2.5% of the occupational/controlled exposure limit of $1,000 \mu\text{W}/\text{cm}$ for FM broadcast frequencies.

Also on the same tower is K215EB's side-mounted Scala Yagi antennas with .052 kW ERP CP at 8 m AGL. Per the manufacturer's published specifications, the relative field at 90 degrees is 0.23 or .0239 kW. The maximum RF exposure will be less than $12.5 \mu\text{W}/\text{cm}^2$, or 6.3% of the general population/uncontrolled exposure limit of $200 \mu\text{W}/\text{cm}^2$ and 1.3% of the occupational/controlled exposure limit of $1,000 \mu\text{W}/\text{cm}$ for FM broadcast frequencies.

On a tower .1km to the south is K288EU side-mounted Scala Yagi antennas with .006 kW ERP CP at 16 m AGL. Per the manufacturer's published specifications, the relative field at 90 degrees is 0.23 or .003 kW at ground level. RF exposure will be less than $0.39 \mu\text{W}/\text{cm}^2$, or 0.2% of the general population/uncontrolled exposure limit of $200 \mu\text{W}/\text{cm}^2$ and 0.04% of the occupational/controlled exposure limit of $1,000 \mu\text{W}/\text{cm}$ for FM broadcast frequencies.

On a tower .07km to the south is KCLK-FM's side mounted FM 8-bay antenna with 100 kW ERP CP at 86 m AGL. Page five of this Exhibit is a printout from the Commission's FM Model for Windows software for KCLK-FM's FM antenna. As shown, at ground level RF exposure will be less than $55 \mu\text{W}/\text{cm}^2$, or 27.5% of the general population/uncontrolled exposure limit of $200 \mu\text{W}/\text{cm}^2$ and 5.5% of the occupational/controlled exposure limit of $1,000 \mu\text{W}/\text{cm}$ for FM broadcast frequencies.

On the same tower as KCLK-FM is KVAB's side mounted FM 1-bay antenna with 0.44 kW ERP CP at 67 m AGL. Page six of this Exhibit is a printout from the Commission's FM Model for Windows software for KVAB-FM's FM antenna. As shown, at ground level RF exposure will be less than $1.6 \mu\text{W}/\text{cm}^2$, or 0.8% of the general population/uncontrolled exposure limit of $200 \mu\text{W}/\text{cm}^2$ and 0.16% of the occupational/controlled exposure limit of $1,000 \mu\text{W}/\text{cm}$ for FM broadcast frequencies.

On a tower .09km to the South is KLEW-TV's top-mounted channel 3 bat-wing antenna with 56.2 kW ERP H Visual and 5.62 kW aural at 84 m AGL. By reference to Table 1 of the Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65 Supplement A, Evaluating Compliance With FCC Guidelines For Human Exposure to Radio Frequency Electromagnetic Fields, using equation #2 in Section 3, Television Broadcast Stations, the calculated power density at ground level for a "bat wing" antenna with a relative field factor of 0.2 is $5.3 \mu\text{W}/\text{cm}^2$,

or 2.7% of the general population/uncontrolled exposure limit of 200 $\mu\text{W}/\text{cm}^2$ and 0.53% of the occupational/controlled exposure limit of 1,000 $\mu\text{W}/\text{cm}$ for TV channel 3 broadcast frequencies.

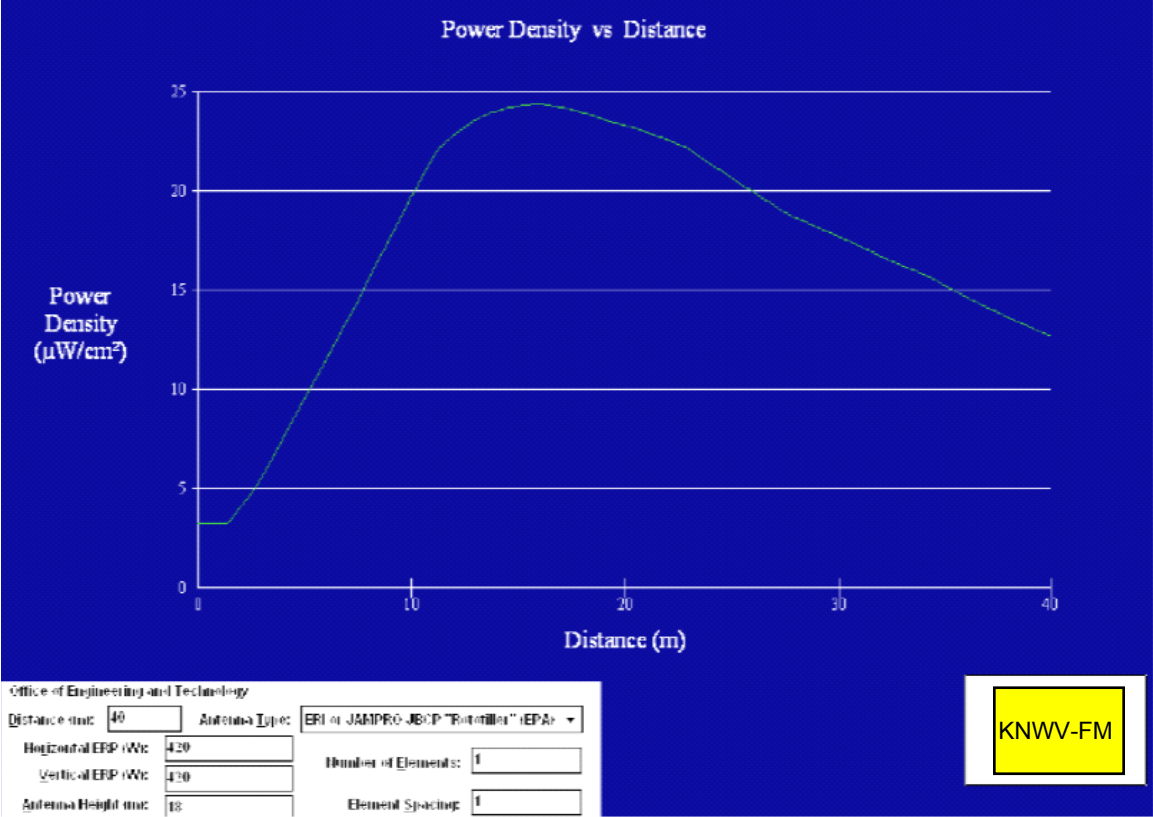
On the same tower as is KLEW-TV's side-mounted channel 32 Dielectric Digital antenna which is operating with an STA ERP of 5 kW at 69 m AGL and with an authorized ERP of 200 kW. At 69 m AGL this antenna will have a worst case relative field factor of 0.117 per Dielectric elevation pattern data. All calculations are made using the higher authorized 200 kW ERP. By reference to Table 1 of the Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65 Supplement A, Evaluating Compliance With FCC Guidelines For Human Exposure to Radio Frequency Electromagnetic Fields, using equation #2 in Section 3, Television Broadcast Stations, the calculated power density at ground level for the Dielectric Digital antenna with a relative field factor of 0.117 is 19.2 $\mu\text{W}/\text{cm}^2$, or 4.9% of the general population/uncontrolled exposure limit of 389 $\mu\text{W}/\text{cm}^2$ and 1% of the occupational/controlled exposure limit of 1,947 $\mu\text{W}/\text{cm}$ for channel 32.

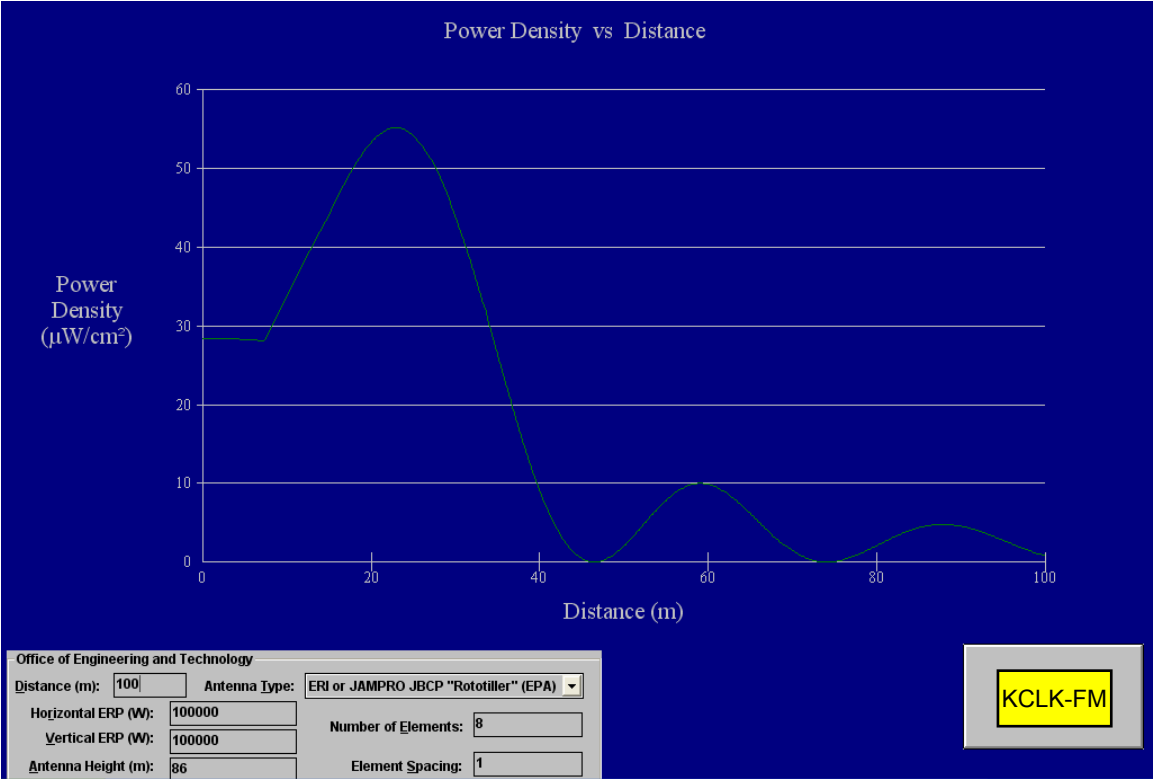
By adding the exposure results for all of the stations at and near the site, the total exposure can be determined. Even though the maximum exposure from all of the stations probably will never be this high in any one spot, this figure is used as a worst-case maximum. The total of the general population/uncontrolled exposure values is 54.9% and the total of the occupational/controlled exposure values is 11%.

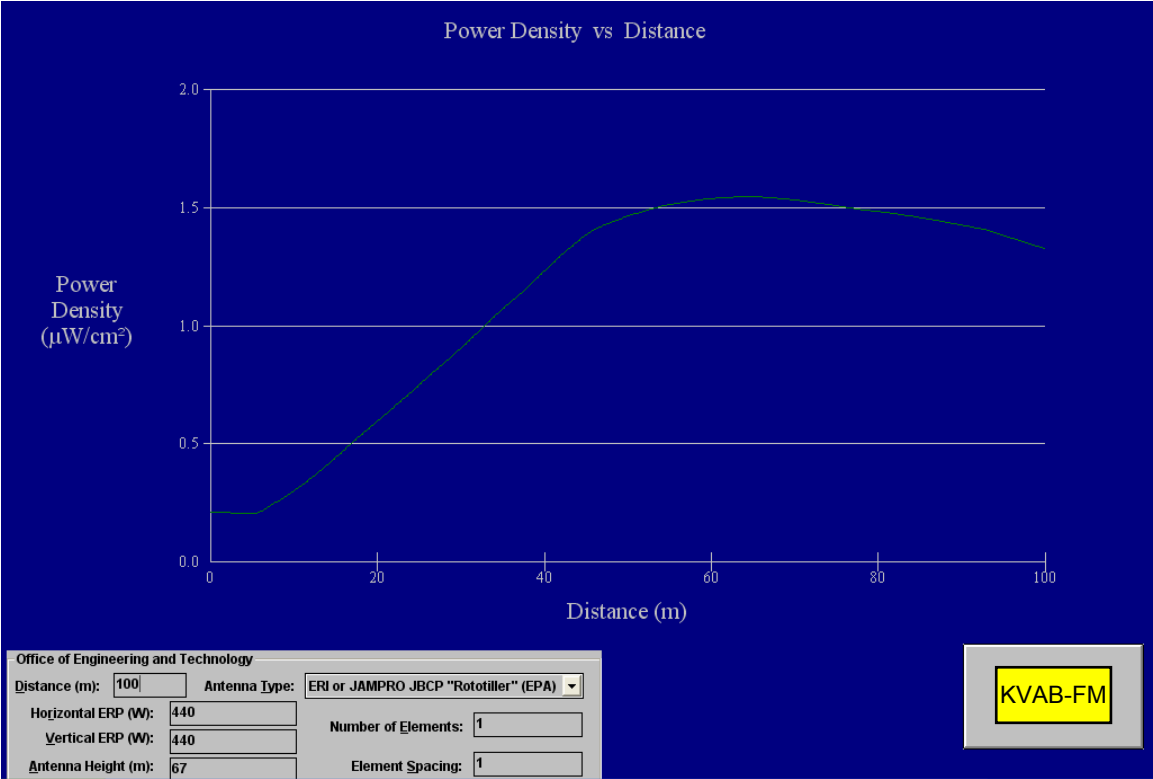
This is *prima facie* evidence of compliance with the MPE requirements in the frequency ranges in use at this site, as regards to general population/uncontrolled and occupational exposure at or near ground levels. Because of the large margin of safety, the applicant does not believe that post construction measurements of the radio frequency power density are necessary.

The applicant is cognizant of its responsibility to protect those workers whose duties require that they be in the vicinity of the antenna from exposure to radio frequency fields in excess of those outlined above. To that end, signage is attached to the base of the antenna support structure and fence warning all workers of the potential for harmful exposure and directing them to contact the responsible person at the proposed broadcast station. That person will ascertain whether the worker will be in areas where there is an exposure hazard, and if so, arrange to shut down the transmitter. It will be assumed that an exposure hazard may exist on the antenna support structure at elevations above 10 meters, AGL.

For these reasons, the applicant believes that a Commission grant of this application would not have a significant environmental impact.







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New Search

FCCInfo Search Results

FM Records Within 2 km of 46-27-26 N Latitude; 117-06-00 W Longitude.

Sort Key: ▲ = Ascending ▲ = Not Sorted [Click Icons Below to Change Sort Order.]

Status ▲	Calls (Click for Details) ▲	Freq (MHz) ▲	Channel ▲	Power (kW) ▲	HAAT (m) ▲	City ▲	ST ▲	Distance (km) ▲	Bearing (°T) ▲	Facility ID ▲	File Number ▲
LIC	KNWV(FM)	90.5	213A	0.25	324	Clarkston	WA			71042	BLED-19950721KA
LIC	K215EB	90.9	215D	0.052		Clarkston	WA			71026	BLFT-20041118ACK
APP	NEW(FM)	92.1	221D	0.01		Lewiston	ID	0.09	60.55	143449	BNPFT-20030317EPL
ADD	(FM)	94.1	231C0			Clarkston	WA	0.07	295.82		RM-11245
DEL	(FM)	94.1	231C			Clarkston	WA	0.07	295.82		RM-11245
LIC	KCLK-FM	94.1	231C	100	376	Clarkston	WA	0.07	295.82	11721	BLH-19831227AC
APP	NEW(FM)	100.3	262D	0.01		Lewiston	ID	0.09	60.55	152588	BNPFT-20030317ERI
APP	NEW(FM)	102.1	271D	0.01		Clarkston	WA	0.11	54.03	143089	BNPFT-20030314BLH
APP	NEW(FM)	102.1	271D	0.01		Lewiston	ID	0.09	60.55	148646	BNPFT-20030317JGQ
LIC	KVAB(FM)	102.9	275A	0.44	357	Clarkston	WA	0.07	295.82	26862	BLH-19970627KA
LIC	K288EU	104.9	285D	0.006	H: 313 V: 0	Lewiston, Id & Clark	ID	0.1	347.07	37168	BLFT-19990803UA

Study Date: 9/15/2005; Study Duration: 0.8273 Seconds.

Database Sources: 9/15/2005 FCC CDBS,
9/13/2005 FCC ASR,9/13/2005 FCC ULS Microwave, and
9/13/2005 FCC ULS Broadcast Land Mobile.© 2005 Cavell Mertz & Davis, Inc.
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Exhibit #22
Washington State University
Page 7 of 7**CAVELL MERTZ & DAVIS INC.**[New Search](#)**FCCInfo Search Results**

TV Records Within 2 km of 46-27-26 N Latitude; 117-06-00 W Longitude.

Sort Key: ▲ = Ascending ▲ = Not Sorted [Click Icons Below to Change Sort Order.]

Status ▲	Calls (Click for Details) ▲	Channel & Offset ▲	Power (kW) ▲	HAAT (m) ▲	City ▲	ST ▲	Distance (km) ▲	Bearing (°T) ▲	Facility ID ▲	File Number ▲
LIC	KLEW-TV	3-	56.2	384	Lewiston	ID	0.09	70.05	56032	BLCT-19910628KE
CP	KLEW-TV	32DT	200	361	Lewiston	ID	0.09	70.05	56032	BPCDT-19991021ACJ
STA	KLEW-TV	32	5	361	Lewiston	ID	0.09	70.05	56032	BDSTA-20020208ABT
APP	NEW(TV)	53Z	1.7		Lewiston	ID	0.13	350.23	128922	BNPTT-20000830ATL

Study Date: 9/15/2005; Study Duration: 0.3587 Seconds.

Database Sources: 9/15/2005 FCC CDBS,

9/13/2005 FCC ASR,

9/13/2005 FCC ULS Microwave, and

9/13/2005 FCC ULS Broadcast Land Mobile.

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