Comprehensive Engineering Exhibit
Translator for Trenton, NJ
Facility ID No. 140324

This exhibit is for a new translator, facility ID 140324 which is seeking a change in antenna location, change in antenna height and a change in frequency from the original application. The proposed facility will be a fill-in translator for WRFF (FM) Philadelphia, PA.

It is proposed to locate the transmit antenna 24.4 meters above ground on a registered tower, ASR# 1032826 in Trenton, NJ. The proposed antenna is a Scala CL-FM/VRM/50N, vertically polarized, with an ERP of 0.250KW with its main lobe orientated at 130 degrees true north.

Figure 1 is a spacing study from which it can be determined that this proposal is within the protected contour of WRFF for which this translator is a fill-in. Any predicted interference will fall outside of the primary station's community of license of Philadelphia PA. With respect to all other authorized facilities this proposal will not create any prohibited contour overlap.

Figure 2 is a map showing the predicted F(50,50) 54dBu service contours of this proposal, the original application and that of the primary station. It can be seen that the service contour of this proposal lies entirely within the service contour of the primary station.

The proposed facilities were evaluated in terms of potential radio frequency radiation exposure at ground level in accordance with OET Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation."

The proposed antenna has been evaluated using "FM Model", as a worst case "Ring Stub" single bay being mounted with its center of radiation 24.4 meters above ground level with an effective radiated power of 0.250 kilowatts in the vertical plane.

At 2 meters above the surface, at 5.2 meters from the closest point of approach, this proposal will contribute worst case, 15.9 microwatts per square centimeter, or 1.59% of the allowable ANSI limit for controlled exposure, and 7.95% of the allowable limit for uncontrolled exposure. It is therefore believed that this proposal is in compliance with OET Bulletin Number 65 as required by the Federal Communications Commission.

The tower and compound are surrounded by a chain link fence with a locked gate. Further, appropriate warning signs will be posted at the base of the tower warning of the potential radio frequency hazards on the tower. The applicant will cooperate with other users of the site to reduce power or discontinue operation as necessary to limit human exposure to levels less than specified by the Federal Communications Commission should anyone be required to climb the tower for maintenance or inspection.

Figure 1. Spacing Study

Comstudy 2.2 Search of Channel 281 (104.1 MHz Class D) at 40-16-36.7 N, 74-49-33.8 W									
Callsign	State	City	Freq	Channel	ERP_w	Class	Status	Distance_km	Clr
NEW	NJ	TRENTON	104.1	281	250	D	APP	6.85	-40.53 dB
WRFF	PA	PHILADELPHIA	104.5	283	11500	B	LIC	43.88	-9.76 dB
WRFF	PA	PHILADELPHIA	104.5	283	11000	B	LIC	43.88	-9.57 dB
WAEB-FM	PA	ALLENTOWN	104.1	281	50000	B	LIC	81.73	0.86 dB
WAXQ	NY	NEW YORK	104.3	282	6000	B	LIC	88.37	2.85 dB
WAXQ	NY	NEW YORK	104.3	282	13000	B	LIC	88.84	3.78 dB
WAXQ	NY	NEW YORK	104.3	282	17000	B	LIC	88.84	3.45 dB
NEW	NJ	TOMS RIVER	104.1	281	55	D	APP	64.13	6.97 dB
NEW	NJ	TOMS RIVER	104.1	281	38	D	APP	64.24	6.83 dB
WKTU	NY	LAKE SUCCESS	103.5	278	6000	B	LIC	88.37	8.63 dB
WPPZ-FM	PA	JENKINTOWN	103.9	280	370	A	LIC	43.65	8.54 dB
WPPZ-FM	PA	JENKINTOWN	103.9	280	270	A	LIC	43.65	8.21 dB
WAEB-FM	PA	ALLENTOWN	104.1	281	19500	B	LIC	72.22	8.96 dB
WKTU	NY	LAKE SUCCESS	103.5	278	13000	B	LIC	88.84	9.63 dB
WKTU	NY	LAKE SUCCESS	103.5	278	17000	B	LIC	88.84	9.34 dB
NEW	NJ	MANAHAWKIN	104.1	281	10	D	APP	77.22	11.17 dB
NEW	NJ	HAMMONTON	104.1	281	80	D	APP	73.52	14.57 dB
NEW	NJ	HAMMONTON	104.1	281	80	D	APP	73.52	14.57 dB
WAEB-FM	PA	ALLENTOWN	104.1	281	2500	B	LIC	81.73	14.28 dB
WMGM	NJ	ATLANTIC CITY	103.7	279	50000	B	LIC	102.06	17.51 dB
NEW	NJ	ABSECON	104.1	281	19	D	APP	102.5	19.98 dB
NEW	NJ	ABSECON	104.1	281	19	D	APP	102.5	19.98 dB
WKTU	NY	LAKE SUCCESS	103.5	278	1900	B	LIC	89.64	20.98 dB
WPDI	NJ	HAZLET	103.9	280	10	D	APP	53.57	23.54 dB
WNNJ	NJ	NEWTON	103.7	279	2300	B1	LIC	101.15	25.13 dB
W280EE	DE	DOVER	104.1	281	250	D	CP	151.95	26.55 dB
WMGM	NJ	ATLANTIC CITY	103.7	279	8000	B	LIC	102.06	26.92 dB
NEW	NJ	ATLANTIC HIGHLANDS	103.9	280	8	D	APP	67.88	27.69 dB
WXCY	MD	HAVRE DE GRACE	103.7	279	37000	B	LIC	134.74	28.18 dB
WXCY	MD	HAVRE DE GRACE	103.7	279	33000	B	LIC	135.86	29.98 dB
WRFF	PA	PHILADELPHIA	104.5	283	0	B	USE	43.88	29.19 dB
W284BW	NJ	FRANKLIN TOWNSHIP	104.7	284	13	D	LIC	37.31	29.55 dB
WAEB-FM	PA	ALLENTOWN	104.1	281	0	B	USE	81.73	31.49 dB
WMMR	PA	PHILADELPHIA	93.3	227	16500	B	LIC	46.34	31.3
WMMR	PA	PHILADELPHIA	93.3	227	25000	B	LIC	46.03	31
WMMR	PA	PHILADELPHIA	93.3	227	0	B	USE	46.03	31
WPPZ-FM	PA	JENKINTOWN	103.9	280	0	A	USE	43.88	32.34 dB
WNNK-FM	PA	HARRISBURG	104.1	281	22500	B	LIC	180.74	32.45 dB
WSPK	NY	POUGHKEEPSIE	104.7	284	7400	B	LIC	153.58	33.96 dB
WNNK-FM	PA	HARRISBURG	104.1	281	20500	B	LIC	180.74	33.01 dB
W284AQ	NJ	HACKETTSTOWN	104.7	284	250	D	LIC	64.36	33.96 dB
WFAS-FM	NY	BRONXVILLE	103.9	280	980	A	CP	104.56	34.48 dB
WFAS-FM	NY	BRONXVILLE	103.9	280	1300	A	CP	104.56	34.52 dB
WPDI	NJ	HAZLET	104.7	284	10	D	LIC	53.57	35.97 dB
WZFT	MD	BALTIMORE	104.3	282	13000	B	LIC	187.88	36.28 dB
NEW	PA	POTTSTOWN	103.5	278	250	D	APP	68.28	36.57 dB
WMRQ-FM	CT	WATERBURY	104.1	281	14000	B	LIC	219.58	38.97 dB
WQHQ	MD	OCEAN CITY-SALISBURY	104.7	284	33000	B	LIC	213.56	38.39 dB
WZFT	MD	BALTIMORE	104.3	282	20000	B	LIC	185.81	38.06 dB
NEW	PA	POTTSTOWN	103.5	278	130	D	APP	68.28	39.41 dB
WPRS-FM	MD	WALDORF	104.1	281	50000	B	LIC	253.12	39.15 dB
W279BS	PA	HAMBURG	103.7	279	200	D	LIC	100.55	39.50 dB

Figure 2. Contour Map