

NORTHWEST COMMUNITY COLLEGE
KNWT-FM
RF Radiation Compliance

OET Bulletin 65 Edition 97-01

September 30, 2010

NORTHWEST COMMUNITY COLLEGE

RF Radiation Compliance

This report is to show compliance with the FCC established guidelines for exposure to RF electromagnetic fields as described in OET Bulletin 65 Edition 97-01. The stations and methods are described below.

Facilities:

Facility ID	Call Sign	Freq	Antenna	HAGL	ERP	Coordinates
172695	KNWT-FM	89.1	6 Bay	23 Meters	18.5 kw V / H	44 29 46 109 09 09
121854	KOFG-FM	91.1	6 Bay	23 Meters	8.7 kw V / H	44 29 46 109 09 09

KNWT-FM was operating at 18.5 kilowatts and KOFG-FM was operating at 8.7 kilowatts while test were being conducted.

Survey Meter

The measurements were performed using a NARDA Model 8718 B meter S/N 6053 and a NARDA Model 8764D probe S/N 6010. The meter and probe designed to measure electromagnetic fields with respect to human exposure from 100 kHz to 300 GHz. The instrument was last calibrated on 5-27-05.

General Population / Uncontrolled Exposure:

In regard to General Population / Uncontrolled Exposure. A Narda survey meter model 8718B with an 8761D probe was used in the area. The probe is calibrated in percent of limit for Uncontrolled Exposure ($200\mu W / cm^2 = 100\%$) from 300 KHz to 3.0 GHz. Max hold was used while walking around the area with the probe being moved between ground and the 2 meter level. The highest level recorded outside the fenced area was at the North inner guy anchor. The level recorded was $188\mu W / cm^2$. Other measurements were taken around the area and are listed on the chart below. This shows compliance with OET Bulletin 65 Edition 97-01 for General Population / Uncontrolled Exposure.

To meet compliance with Uncontrolled Exposure Limits a fence needs to be constructed around the tower base area. The measurements were taken with the proposed fence in place. Drawing 1 shows the addition of the fence around the tower base.

Occupational / Controlled Exposure:

The Occupational / Controlled Exposure measurements were made using the same meter and methods as the General Population / Uncontrolled measurements. All measurements fell below the allowed level for Occupational / Controlled Exposure.

A spreadsheet showing the levels included in this report. The station is shown to be in compliance with the OET Bulletin 65 Edition 97-01 for Occupational / Controlled Exposure.

Spatial averaging was used for some measurements.

All measurements were taken on by myself Richard Jones on 9-30-10 and are true and accurate to the best of my knowledge.

Richard Jones
RJ Engineering

KNWT-FM

89.1 Mhz

KNWT-FM & KOFG-FM	Ref#	Field Strength mW / cm^2	Location
Run Ref. Number: 00	1	0.035	Main Lobe in front of building 63deg true
Date: 9/30/10 Start Time: 9:43	2	0.036	SE Outer Guy Anchor
	3	0.120	SE Inner Guy Anchor
Model 8718 S/N: 6053	4	0.012	SW Outer Guy Anchor
	5	0.073	SW Inner Guy Anchor
Probe: 8761DS/N: 06010	6	0.035	TCT Electrical Utility Meter
	7	0.190	N Outer Guy Anchor
Freq: 99.9 MHz Cor. Factor: 1.00	8	0.188	N Inner Guy Anchor
	9	0.756	North Side of tower base
Avg Mode: N/A	10	0.120	10 feet from tower base
	11	0.600	NW side of tower base
	12	0.080	SE side of tower base

KNWT-FM / KOFG-FM Drawing 1

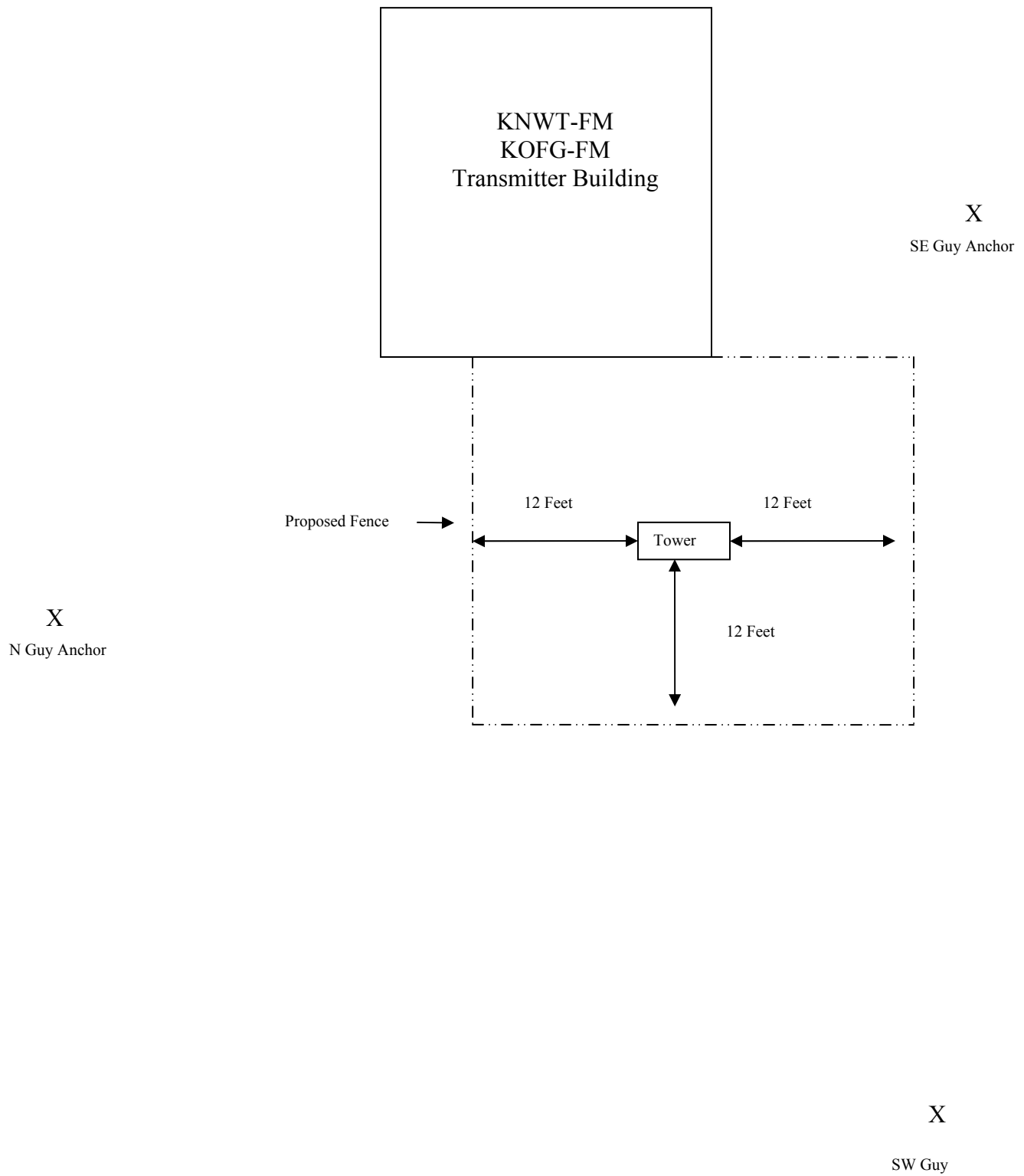


Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)**(A) Limits for Occupational/Controlled Exposure**

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

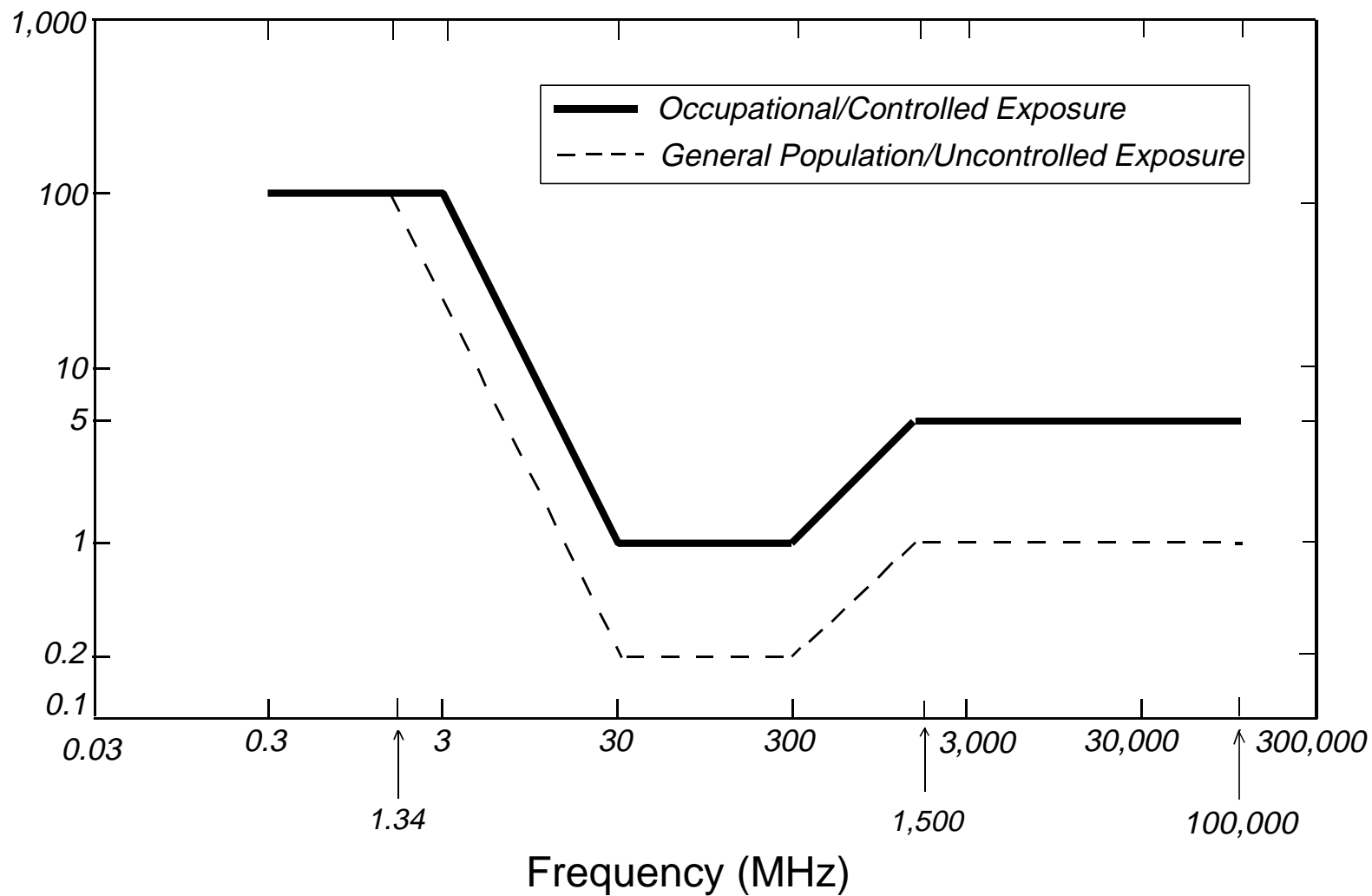
f = frequency in MHz

*Plane-wave equivalent power density

NOTE 1: **Occupational/controlled** limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2: **General population/uncontrolled** exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

Figure 1. *FCC Limits for Maximum Permissible Exposure (MPE)*
Plane-wave Equivalent Power Density





Certificate of Calibration

L-3 Communications, Narda Microwave-East, hereby certifies that the referenced instrument has been calibrated by qualified personnel to Narda's approved test procedures.

Furthermore, the instrument meets, or exceeds, all published specifications and the calibration has been performed with test instrumentation that, where applicable, is traceable to the National Institute of Standards and Technology.

Narda's calibration measurements are traceable to the National Institute of Standards and Technology to the extent allowed by the bureau's calibration facilities.

Customer: RJ ENGINEERING
BILLINGS, MT 59105

Certificate #: 54565 1

Model #: 8718B

Description: METER

Date Calibrated: 05/27/2005

Serial #: 06053

PO #: VISA-JONES

R.O. #: 54565

A handwritten signature in black ink, appearing to read 'Vince Donovan'.

Vince Donovan
Manager of Instruments Assembly and Test

A handwritten signature in black ink, appearing to read 'John C. Stine'.

John C. Stine
Director of Quality Assurance

This certificate shall not be reproduced, except in full, without written approval from L-3 Communications, Narda Microwave-East