

*Jules Cohen, P.E.*  
*Consulting Engineer*

---

**ENGINEERING REPORT  
2005 MEASUREMENTS OF RADIO-FREQUENCY FIELDS  
MADE ON BEHALF OF SPRINT PCS  
IN VICINITY OF LEE PUMPING STATION, ARLINGTON, VIRGINIA**

At the request of Sprint PCS, measurements were made on Tuesday, January 25, 2005, of the levels of radio-frequency ("RF") power density in the vicinity of the Lee Pumping Station, Arlington, Virginia. This report describes the measurements made and the results obtained.

The measurements of power density were begun at 11:52 a.m. and continued for approximately an hour and a half. A determination was first made that the PCS transmitters, feeding energy to the antennas mounted on the catwalk railing of the water tower, were operating at their normal output. The measurements were conducted using a Narda, Model 8718B (S/N 06004) meter with a Model B8742D (S/N 01004) probe rebuilt and calibrated by the manufacturer in July, 2004, and periodically checked for continued accuracy. The Model B8742D probe covers the entire RF spectrum from 0.3 to 3,000 MHz (millions of cycles per second). The probe has a shaped response providing an output permitting the meter to read in terms of percent of the Federal Communications Commission's standard for the general population/uncontrolled environment.

The reason for rebuilding the probe was the discovery by the manufacturer of the presence of a high intrinsic noise level that exaggerated the meter readings. Apparently, measurements made previously using this instrument and probe provided results that were higher than the fields actually encountered. As seen in the accompanying table, only one reading exceeded the threshold of approximately 0.25 percent of the Commission's general population standard. During the course of the measurements to assure that the meter was actually working, it was tested by placing a cell phone close to the probe. This always produced a reading consistent with what should be expected.

A feature of the Narda meter is a built-in power source that permits checking

*Jules Cohen, P.E.*  
*Consulting Engineer*

---

the several elements making up the probe. To provide uniform pickup in all directions, the probe includes three, orthogonally arranged antennas, the outputs of which are added. The normal operation of each of the three arms can be confirmed. This was done prior to use of the meter and probe for measurement purposes. The meter was also "zeroed" following the procedure prescribed by the manufacturer. Another feature of the meter that was employed is the retention of the maximum reading during any reading cycle at a location.

The exposure standard is based on whole body average; therefore a scan is made that approximates the cross section of the body. For the purpose of this study, the maximum reading during each scan was recorded also. Both average and peak are included in the results shown.

Measurements were made just outside the pumping station fence and in the streets including 24th, 25th, Wakefield, Vernon, Woodrow and Wakefield Court. Results are included in the tabulation on the following page.

As shown in the tabulation, the total RF power density from the Sprint PCS transmission plus all other emission sources within the range of frequencies from 0.3 to 3,000 MHz is substantially below the exposure permitted by the Federal Communications Commission for the uncontrolled (general population) environment.

The exposures measured from year to year show a high degree of variability that has now been shown to have been more the result of inaccurate measurements of extremely low electric field strengths than variable outputs of the radio facilities transmitting from the Lee Pumping Station antennas.

<b>Location</b>	<b>Average % of Standard</b>	<b>Peak % of Standard</b>
-----------------	----------------------------------	-------------------------------

*Jules Cohen, P.E.*  
*Consulting Engineer*

Engineering Report  
Measurements at Lee Pumping Station

Page 3

At Pumping Station Fence Gate	See note	See note
Road Alongside Fence	See note	See note
24th and N. Wakefield	See note	See note
2245 N. Vernon	See note	See note
2336 N. Vernon	See note	0.300
2355 N. Vernon	See note	See note
4409 25th North	See note	See note
4415 25th North	See note	See note
4427 25th North	See note	See note
2411 N. Woodrow	See note	See note
23rd St. and N. Wakefield	See note	See note
23rd Rd. and N. Wakefield	See note	See note
24th and N. Wakefield Ct.	See note	See note
2455 N. Wakefield Ct.	See note	See note
2471 N. Wakefield Ct.	See note	See note
4631 24th North	See note	See note
4651 24th North	See note	See note
Entrance to Missionhurst	See note	See note
4710 25th North	See note	See note

Note: Below sensitivity threshold of meter - approximately 0.25 percent of FCC maximum permitted exposure for general population.

I declare under the penalty of perjury that the foregoing is correct to the best of my knowledge and belief.

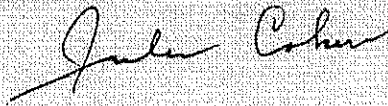
**Jules Cohen, P.E.**  
*Consulting Engineer*

---

Engineering Report  
Measurements at Lee Pumping Station

Page 4

I declare under the penalty of perjury that the foregoing is correct to the best of my knowledge and belief.



Jules Cohen, P.E.

January 25, 2005

