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Review of Revised Report
by
dBm Engineering, P.C.
“Non-Ionizing Electromagnetic Radiation (NIER)”
V-Fee Mendham Apartments
84-90 East Main Street
Mendham, NJ 07945

Prepared by

Bruce Eisenstein, Ph.D., P.E.

November 8, 2024

A handwritten signature in blue ink that reads 'Bruce A. Eisenstein'. The signature is fluid and cursive, with a long horizontal stroke at the end.

Bruce A. Eisenstein, Ph.D., P.E.

Introduction

In preparation for this revised report, I read the document with Subject line below and hereafter referred to as “*The Revised Report.*”

*Non-Ionizing Electromagnetic Radiation (NIER) Report
“V-Fee Mendham Apartments”
84-90 East Main Street
Mendham, NJ 07945
Dated: **October 4, 2024***

This document was prepared by dBm Engineering, P.C., PO Box 165, Fairview Village PA 19409, authored by Andrew M. Petersohn, P.E. in response to a number of suggestions and questions about his original submission dated August 12, 2024 that I made in my report dated September 5, 2024 and previously submitted to the Board.

I also reviewed my files from the time the proposal was made to erect a cell tower at the Kings Shopping Center including my report on the proposal dated October 19, 2009.

I also read and reviewed the following Federal Documents for the basis of the analysis:

- *** The FCC Telecommunications Act of 1996
- *** Section 1.1310 in Title 47 of The Code of Federal Regulations (47 CFR §1.1310) entitled “Radiofrequency radiation exposure limits” for the FCC limits on Maximum Permissible Exposure (MPE) for radiofrequency radiation in the bands at which both cellular and PCS systems operate.
- *** The FCC Office of Engineering Technology Bulletin (OET Bulletin 65, Edition 97-01, August 1997) entitled “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields”

Background

The salient aspects of cellular communications and the FCC positions on this subject are contained in my earlier report and will not be reproduced here.

Critique of the Petersohn August 12, 2024 Report

When I reviewed the 8/12/2024 report, I made the following observations and criticisms.

- I would call particular attention to the 4 assumptions in Appendix A on page 10 below. I do not see these assumptions explicitly stated in The Report and I would conclude that they were not made.
- In particular, it should be assumed that all antennas on the site are operating continuously at full power and full channel capacity. I do not see that assumption in The Report.
- Further, the OET 65 calculation is done for ground level exposure and assumes a person standing on the ground at a height of 6'6". This is a conservative assumption since the taller the assumed person is, the more exposure they would get. On page 1 of The Report, it is stated that, ". . .the cumulative radio frequency exposure levels would be less than 0.5% of the applicable FCC standard at all **ground level** locations..." However, in the present case, we are less interested in exposure on the ground and more interested in exposure 40 to 50 feet above the ground at a distance of 150' from the antennas and in the main beam of the antennas.
- It is further stated in The Report without evidence or calculation that, "All rooftops and other elevated positions of the proposed multi-family development will also be compliant with the applicable FCC standard."
- I note in passing that an MPE level of 0.5% is a number I have seen many times in the past for a single provider, 120' antenna at a distance of 600' from the pole site. I am skeptical that the power would be that low at a distance of 150' from the pole and 50' above ground with 6 transmitters operating at full power.

My summary opinion at the time of that review was:

Because of the missing and incomplete information in The Report, I am unable to render an opinion as to the safety of the multi-family building with respect to radio frequency exposure.

Update and Revision of Opinion

Following receipt of my report, on September 25, 2024 I had an extensive discussion with Mr. Petersohn at which time he agreed to modify his study of the emissions at the subject site incorporating *all* of the suggestions I made. He has done so and his revised report in fact shows the data in the form I requested. The conclusions of his report can be best seen in his Figure 10 reproduced below for convenience. This figure shows the cumulative effect of all of the antennas on the existing monopole, all operating at maximum power, and for all of the frequency bands used. I have reviewed his analysis and it appears he followed the guidelines in FCC OET-65 for the calculations.

My conclusion is that, although there is penetration of the EM signals into inhabited spaces, the level is below the safety level established by the FCC and because NJ law is 5 times less stringent, well below the limits set by NJ. It can be seen that in the inhabited spaces and roof of the building at the left of the drawing, the maximum exposure (what would be called the worst-case scenario) is ‘yellow’ representing 15% of the allowable limit set by the FCC.

