



CONSULTANTS IN COMMUNICATIONS TECHNOLOGY

EVANS ASSOCIATES AM DETUNING PROCEDURES

Evans Associates is recognized as an expert in re-radiation matters including the disturbance of AM station antenna patterns caused by the construction or modification of towers in the immediate vicinity of an AM broadcast facility. Since the advent of cellular phones, personal mobile licensees have constructed numerous towers, some of which were close to an AM broadcast antenna array. In some cases, this construction caused the AM station antenna radiation pattern to be distorted by re-radiation from the tower. This results in operation outside the radiation parameters specified by the FCC for the AM station. The proliferation of wind turbines and other metallic structures has exacerbated this problem.

In January 1995, the FCC amended Part 22 of the FCC Rules to spell out, under Paragraph 22.371, the responsibility of the Public Mobile Service Licensees who propose towers in the immediate vicinity of an AM station.

Normally, "before" field strength readings are made on the AM station prior to construction of the tower. If necessary, the tower or wind turbine can be "detuned" with one or more 3-wire "skirts". The height of the tower determines how many detuning skirts are needed. The "after" field intensity measurements are then taken to illustrate that the presence of the tower has not affected the AM station. Reports are then sent to the stakeholders.

Our file library and electronic database contain engineering information on all licensed, authorized and proposed AM stations in the country, so most of the information we require to do a detuning job is at hand. In fact, our engineering files for most AM stations are more complete than the stations' own files.

On some occasions we determine that a cell tower does not have to be detuned. If the tower is very short (compared to wavelength) and the AM station uses a non-directional antenna, then detuning is frequently not necessary. This is confirmed by taking the "after" field intensity measurements at the same locations that the "before" measurements were made.

A number of factors determine the final cost of a detuning project:

- 1) The complexity of the station's antenna patterns
- 2) Number of antenna patterns (usually no more than two)
- 3) Type of tower
- 4) Charges by tower climbers
- 5) Cost of detuning equipment, if required

To discuss your detuning project in detail, please contact Ralph Evans at 262-242-6000.