Federal Communications Commission, Form 442

Exhibit No. 1

(Reference for Item No. 7)

Prepared by: Maryland Department of the Environment

The Maryland Department of the Environment (MDE) is a partner in a cooperative agreement with the Environmental Protection Agency (EPA) to use wind profiling technology to better understand the transport of air quality pollutants such as ozone. Wind profiling radar depends on the scattering of a transmitted signal by irregularities in the index of refraction of the air. The irregularities are caused by turbulent eddies created by the wind. By receiving the scattered signal and determining the Doppler frequency, the speed of the wind can be determined. Temperature data can also be obtained by measuring the velocity of propagation of an acoustic signal in the axis of the vertical radar beam. The hardware involved is as follows: a receiver/modulator, a final amplifier/preamplifier, a digital control and data processor, and an antenna system directed to zenith. These items were developed by the National Oceanic and Atmospheric Administration (NOAA) and were fabricated by Radian International.

This experimental license will be used in support of other wind profiling radar equipment in the Mid-Atlantic States, put in place by the NARSTO-NE group in the summer of 1997. The license will also be used to support airplane flights by the University of Maryland at College Park that measure ozone on poor ambient air quality days in the summer. The license will also be used to support ground-level air quality conditions as measured by MDE at 16 existing air monitoring sites throughout Maryland. The objective of the study is to obtain a clearer understanding of ozone and other air quality pollutants in the upper atmosphere and to fulfill a federal mandate to measure surface level air quality pollutants and operate a wind profiler.