

ENGINEERING STATEMENT
TO ACCOMPANY REQUEST FOR
EXPERIMENTAL LICENSE FOR
CATERPILLAR, INC.
AT PROVING GROUNDS LOCATED IN
PEORIA, ILLINOIS AND TUCSON, ARIZONA
JANUARY 2007

COHEN, DIPPELL AND EVERIST, P.C.
CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington)
) ss
District of Columbia)

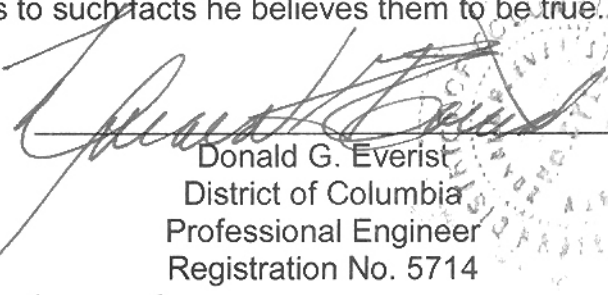
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

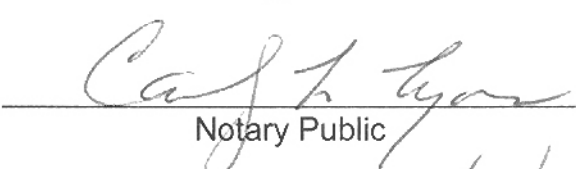
That his qualifications are a matter of record in the Federal Communications Commission;

That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.


Donald G. Everist
District of Columbia
Professional Engineer
Registration No. 5714

Subscribed and sworn to before me this 11th day of January, 2007.


Notary Public

My Commission Expires: 2/28/2008



This engineering statement has been prepared on behalf of Caterpillar, Inc. ("Caterpillar") and accompanies its submission of FCC Form No. 442. The request is to obtain an experimental license to operate as needed for brief intervals in which primarily critical electronic components on large earth moving equipment is subject to electromagnetic fields investigation. The purpose of the electromagnetic investigation is to ensure that manufacturer's compliance is achieved by the device or equipment under test as well as compliance with European and other industry certification requirements.

Due to the nature of the large vehicles that need to be subject to this rigorous testing, it is currently not practical to conduct this investigation in an enclosed anechoic chamber environment. Caterpillar has two large tracts of land constructed for Proving Ground which offer an ideal outdoor environment for this investigation. The outdoor tests would then not be limited by a vehicle size constraint since the caliber of Caterpillar manufactured products tends to be rather extensive. Each site is ideal since there is an existing concrete pad, and building in which to devise the various investigations. Some of these investigations involve raising the earth moving equipment off the ground by a specially devised stand so that the equipment can be fully operational and running during the electromagnetic testing. Special monitoring devices are placed on the equipment under test to observe the various functions of the performance on control and other circuitry.

As disclosed in Page 3 of FCC Form 442, the two sites are located near Peoria, Illinois and near Tucson, Arizona.

Proposed Test Site

Peoria, Illinois Proving Grounds

N 40° 44' 48" E

89° 28' 22"

WGS 84

Proposed Test Site

Tucson, Arizona Proving Grounds

31° 49' 38"

111° 08' 38"

WGS 84

The equipment under test ("EUT") is typically those components which have an electronic function and possibly be subjected to some deviation if operated in a high electromagnetic field environment. As stated above, a specially devised stand is required for monitoring of various earth moving equipment while the vehicle is engaged in a normal performance mode.

Because of the wide-range in frequencies that the EUT must be subjected to, various antennas are used in the testing phase. These include a horn style, log periodic yagi and other broadband antennas typically employed for these types of investigations. The antennas are typically mounted 3 to 5 meters from the component being subject to scrutiny. As shown in response to Page 2 of FCC Form 442 the other equipment used to generate this electromagnetic energy is as follows:

The following items are for use under the requested Experimental Radio Service License:

Manufacturer	Model # (Or Equivalent)
RF Powerlabs	220-1K60L
Amplifier Research	15A250
Amplifier Research	500W1000M7
Amplifier Research	120S1G3
Amplifier Research	100W1000M1
Amplifier Research	150A100A
Agilent Technologies	8648D
Hewlett Packard	8648C
NOTE: Since the equipment to be used is not intended for use in communication systems, no provisions exist for station identification. Therefore, exemption from the Part 5.115 station identification requirements is requested.	

Caterpillar, while a holder of the experimental equipment license, plans to contract out the actual investigation to a company familiar with conducting this type of electromagnetic investigation. Since this is only a part of the EUT procedures necessary to conduct an investigation on large earth moving equipment, Caterpillar personnel will be involved in the overall investigation and hence present. In addition, not only standards of good engineering practice will be used but FCC Rules, Part 2 and Part 5 will be available as reference.

Caterpillar or its contractor will coordinate with various public safety agencies in the area. These include fire, rescue, police and other governmental entities, local and Federal. These frequencies that are identified in use are excluded from the test. In addition, public data on frequencies used by these agencies will also be reviewed. Since this EUT is conducted with relatively low-power, broadcast stations, that operate with very high power in comparison to the

specially devised test configuration, are not notified nor are they considered. However, if a unique situation develops and interference results, that particular frequency will be removed from further use.

As indicated above, these investigations are performed over relatively brief periods of time and are not conducted on a regular schedule. Each frequency that is used in the investigation may be active for a brief period of time.

There is no construction of facilities involved since the existing concrete pad and building and all test equipment is portable, and removed once the electromagnetic investigation is completed. Therefore, there is no environmental impact. The Caterpillar staff indicates that the immediate test area will have signage to avoid any possible radio frequency field value exposures in excess of FCC guidelines. We understand that the Proving Ground has restricted access.