• Dr. Daniel Wartenberg, epidemiologist, Institute of Environmental and Occupational Health Sciences, Piscataway, NJ.

Harold Walter of Tydings & Rosenberg in Baltimore, who is representing Electro-Matic, said that the defense will "probably" disclose its experts in April. In an interview, Walter also said that he plans to move to dismiss the case sometime this summer. Currently, it is scheduled to go to trial in the fall in Maryland state court.

A degausser erases information from audio, video and computer tapes by applying a powerful magnetic field. The machine that Grimes and van Meter used at NSA's headquarters in Ft. Meade, MD, generated extremely-low-frequency fields as strong as 2,500 G, according to documents from the intelligence agency. When operating the machine, workers could receive sustained exposures to fields as high as 44 G.

In 1993 the NSA took steps designed to keep employees' exposures to EMFs from degaussing equipment below 10 G—the limit endorsed by the American Conference of Governmental Industrial Hygienists (ACGIH). Following what it described as a policy of "prudent avoidance," the agency modified the degaussers and instructed workers not to sit or stand next to them.

Five years later, a survey conducted by the National Institute of Occupational Safety and Health found that more than 600 NSA workers had operated the Electro-Matic machine. About 150 employees had received exposures ranging from 20 to 70 G from another Electro-Matic degausser at NSA headquarters.

The Angelos firm is also representing Albert Meier and Nancy Ringler, who contend that their brain tumors resulted from using Electro-Matic degaussing equipment while working at the NSA. They filed suit in Maryland state court last July, but the U.S. Federal District Court in Baltimore later accepted a defense motion to move the Meier and Ringler cases there.

The Angelos firm is representing four others who used the degaussing machines at NSA headquarters and developed brain tumors, John Pica Jr., an attorney with the firm, told *Microwave News.* To date, no decision has been made on how to proceed with these cases, Pica said.

In addition to its EMF lawsuits, the Angelos firm has taken on litigation over cell phones and brain cancer (see p.5).

NAS–NRC's 1996 EMF Report "Biased," Professor Charges

The U.S. National Academy of Sciences–National Research Council's (NAS–NRC) 1996 EMF report is "culturally biased," according to a detailed analysis by Professor Magda Havas of Trent University in Peterborough, Canada. Her 80-page paper appeared in the September issue of *Environmental Reviews (8,* pp.173-253, 2000)*,* a peer-reviewed journal published by Canada's National Research Council.

"Whenever a detectable biological response was observed, the authors of [two chapters on bioeffects] would end each paragraph by trying to downplay the effect in some way. This happened so frequently that I began to think 'Methinks, thou doth protest too much!'," Havas wrote.

In each case, the cautionary comments may be valid, Havas allows, "but they were expressed so frequently whenever a biological response was reported that I got a definite impression of bias, especially since the studies that showed no biological effects were not similarly scrutinized."

The NAS–NRC report concluded that there is "no conclusive and consistent evidence" that residential exposures to EMFs present a human health hazard, though it did find that children living near high-current power lines do have an increased risk of leukemia (see *MWN,* N/D96).

"I think that there are health effects due to EMF exposure," Havas told *Microwave News,* "but people cannot deal with noisy data." Havas explained that she is confident that EMFs have beneficial uses, not just negative impacts. "We can use this technology for medical therapies," she said.

In the conclusion of her paper, Havas observes that: "The debates and discussions we are having as a society about EMFs are no different to those that occurred with asbestos, lead, DDT and acid rain. All of these issues had their experts who stated that the results were inconclusive or contradictory or unproven until the mechanisms were identified."

Havas's paper is available on the Web at <www.nrc.ca/cgi-bin/cisti/journals/rp/rp2_tocs_e?er_er3-00_8>. It is free for Canadian citizens; others must pay C$20.00.

California EMF Survey Says 1,700 Classrooms Exceed 5 mG

About 1,700 classrooms in California have average EMF exposures above 5 mG, according to a survey sponsored by the California EMF Program in Oakland.

This estimate is based on a three-year study by Enertech Consultants of Campbell, CA, which conducted a detailed assessment of EMF sources in 89 public schools across the state between 1996 and 1999. The survey found that 20% of all school areas had average magnetic fields above 1 mG, while 1.1% have average fields above 5 mG.

"School areas" included outdoor spaces, hallways, etc. When the analysis was limited to classrooms, 0.63% had average fields of 5 mG or more—which, according to Enertech's estimate, would translate to about 1,700 classrooms across the state.

The most common source of higher field levels was net current due to a given school's wiring practices (see also *MWN,* M/J96). Enertech estimates that 11,000 classrooms in the state have field levels above 2 mG because of net current, while only 140 are above 2 mG because of transmission lines.

To reduce the average field level to less than 2 mG in all school areas throughout the state would cost $79 million, Enertech calculates—an average of $10,000 per school. The largest part of this cost would be for electricians' wages, since the materials cost for reduction of internal fields (the main source) is small. The report notes that highly skilled electricians could do the job at lower cost, since they would be more efficient in determining the sources of net current.

The report's 24-page executive summary is available on the Web at <www.dnai.com/~emf/research.html>.