

November 7, 1996

Mr. Richard Clark  
Route 5, Box 129-D  
Ada, Oklahoma 74820

Dear Mr. Clark:

I am providing a brief liaison report regarding the program entitled "Extremely-Low-Frequency (ELF) Electromagnetic Fields: Issues in Biological Effects and Public Health." This was the program of the 1994 annual meeting of the National Council on Radiation Protection and Measurements. This report was prepared by a member of the Nuclear Regulatory Commission staff.

Essentially, the report concludes that no effects were detected due to exposure to ELF, other than those due to actual thermal heating of tissue by the ELF. I have enclosed the program for the aforementioned meeting which you may find useful in obtaining further information.

With regard to your microwave, I suggest you contact the Consumers Product Safety Commission at telephone number (800) 638-2772 or your State's Consumer Protection Agency. I hope that this is responsive to your request.

Sincerely,

Original signed by /s/

Lawrence E. Kokajko, Senior Project Manager  
Spent Fuel Licensing Section  
Spent Fuel Project Office  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: As stated

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## Liason Report

National Council on Radiation Protection and Measurements  
NCRP Annual Meeting April 6-7, 1994

Myron Pollycove, M.D.,

The one and a half day program addressed, "Extremely-Low-Frequency (ELF) Electromagnetic Fields: Issues in Biological Effects and Public Health." After discussion of electromagnetic field issues and controversies, the meeting presented recent research concerning interaction mechanisms and bioeffects of ELF fields. Interesting data demonstrated reproducible changes in biological signals in transduction pathways, cellular and molecular effects, physical-chemical mechanisms and signal-to-noise ratios, and tissue and animal effects. No harmful effects were demonstrable at levels below gross thermal tissue destruction at lethal temperatures.

Studies of human responses, exposures, and epidemiology included general physiological, reproductive and developmental data, residential and occupational exposures. No effects were detected in any of these studies. Anecdotal cluster effects were entirely within statistical predictions.

The final half day was devoted to risk perception by the public, risk management and decision making under "uncertainty." Predictably it was concluded that more research activity and funding was needed to deal with the "social costs of not knowing."

## ***Program for the 1994 Annual Meeting of the NCRP***

The National Council on Radiation Protection and Measurements (NCRP) released today the provisional program for the 1994 Annual Meeting. The meeting will be held April 6-7, 1994 in the Crystal Forum at the Crystal City Marriott, 1999 Jefferson Davis Highway, Arlington, Virginia.

The scientific program for the meeting was developed by the Program Committee consisting of Thomas S. Tenforde, Chairman; Larry E. Anderson, Carl H. Durney, Leeka Kheifets, M. Granger Morgan, Charles Polk and David H. Sliney.

The scientific session which begins on April 6, 1994 at 8:30 a.m. will have as the theme, *Extremely-Low-Frequency Electromagnetic Fields: Issues in Biological Effects and Public Health* and will include presentations as follows:

### **Electromagnetic Fields—Issues and Controversies**

#### *Biological Interactions and Health Effects of Electromagnetic Fields—An Overview*

T.S. Tenforde  
Battelle, Pacific Northwest Laboratories

#### *Dosimetry of Electromagnetic Fields*

C.H. Durney  
University of Utah

#### *Some Contemporary Issues in Radiofrequency Fields*

A.W. Guy  
University of Washington (Emeritus)

### **Interaction Mechanisms and Bioeffects of ELF Fields**

#### *Biological Signal Transduction Pathways*

R.A. Luben  
University of California at Riverside

#### *Cellular and Molecular Effects*

R. Goodman  
Columbia University

### *Physical/Chemical Mechanisms and Signal-to-Noise Ratios*

C. Polk  
University of Rhode Island

#### *Animal and Tissue Effects*

L.E. Anderson  
Battelle, Pacific Northwest Laboratories

### **Human Responses, Exposure Assessment and Epidemiology**

#### *Observations and Implications of Laboratory Studies on ELF Fields*

M.A. Stuchly  
University of Victoria

#### *ELF Exposure Assessment: Measurements and Surrogates*

T.D. Bracken  
T.D. Bracken, Inc.  
Portland, OR

#### *General Physiological Effects*

C. Graham  
Midwest Research Institute  
Kansas City, MO

*Reproductive and Developmental Effects*  
N. Chernoff

U.S. Environmental Protection Agency

*Epidemiologic Studies of Residential  
Exposures to ELF Fields*

P.A. Buffler

University of California at Berkeley

*Epidemiologic Studies of Occupational  
Exposures to ELF Fields*

D.A. Savitz

University of North Carolina

*Challenges of Epidemiologic Studies  
on Electromagnetic Fields*

L. Kheifets

Electric Power Research Institute

The program for April 6, 1994 concludes with the Eighteenth Lauriston S. Taylor Lecture on Radiation Protection and Measurements. R.J. Michael Fry has been selected as the Taylor Lecturer for 1994. The lecture will be followed by a reception in Dr. Fry's honor.

The program for April 7, 1994 begins at 8:30 a.m. with the NCRP Business Meeting. Subsequently, the scientific session resumes and includes the following:

**Decision Making and Public Policy**

*Significance and Limitations of Laboratory  
Studies on ELF Fields*

A.R. Sheppard

J.L. Pettis Veterans Administration Hospital

*Risk Perception and Management  
of ELF Fields*

M.G. Morgan

Carnegie Mellon University

*Social Costs of Not Knowing*

H.K. Florig

Resources for the Future

*Decision Making Under Uncertainty:*

*Transmission Line Exposure*

*Reduction Supply Curves*

J. Adams

Carnegie Mellon University

*Decision Making Under Uncertainty:*

*A Decision Analytic Approach to Office*

*Building Field Exposure Management*

D. von Winterfeldt

University of Southern California

The program will conclude with brief presentations on selected activities of the NCRP.

In addition to all of those having an interest in the subject matter, the NCRP is extending a special invitation to representatives of the 49 Collaborating Organizations and to the more than 600 scientists serving on the Council's scientific committees.

There is no registration fee for the meeting but those attending are asked to register at the meeting reception desk.