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July 7, 1982

50-443/444

Mr. Louis L. Wheeler, Project Manager
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Re: Comments on Draft Environmental Statement

Dear Mr. Wheeler:

Please be advised that this office represents the Society for the Protection of the Environment of Southeastern New Hampshire. I wish to comment on Section 4.3.6 "Historic and Archeological Sites. It is my understanding that Mr. Jordan E. Tannenbaum, Chief, Eastern Division of Project Review, Advisory Council on Historical Preservation, 1522 K Street, N.W., Washington, DC had contacted the NRC as late as May 5, 1981 concerning the historical district in South Hampton. I have further been informed that the historical district has been adopted by the Town of South Hampton pursuant to the law of the State of New Hampshire. I have further been informed that the Petition for these two historical districts in South Hampton should be approved by the State of New Hampshire forwarded to the Advisory Council on Historical Preservation. Both of these districts are involved in the path of the transmission corridor as it is presently approved.

There is no mention in the DES as to the aesthetic effect which the transmission lines would make on this small New Hampshire town. The area of South Hampton is only 7.2 square miles and the present approved transmission corridors would make that small New Hampshire town the most saturated with transmission lines in the state.

No mention is made of Indian Ground Hill which is a potential Archeological Site in the path of the transmission lines. It should be pointed out that the construction of pads for the erection of poles and construction equipment to affect this could be a deleterious effect on this archeological site.

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Another area of concern the Chapter entitled Environmental Consequences and Mitigating Actions. In reply to the DES at 5.5.1.2, "Induced Voltage and Low-Level Electric Fields", I should like to point out to the NRC various areas in which recent reports have been published concerning the effects on humans in electric and magnetic fields. First of all, in the area of cardiovascular functions, it has been shown that electric and magnetic fields can cause unstable pulse rates and arterial pressures. This was recently demonstrated in publications by:

1. Asanova and Rakov, 1966.
2. Cerretelli and Malaguti, 1976.
3. Coate and Teeters, 1970.
4. Lott and McCain, 1973.

Clinical pathological effects from electric and magnetic field exposures to hematology and serum chemistry parameters had been reported in the numerous experiments in both animals and man. Recent studies of this phenomenon indicate altered chemistry values have included: LDH, SCOT, albumin, alpha and beta globulins, glucose, BUN, corticosteroids, testosterone, and calcium. Hematological changes have been noted in the following: leukocytes, neutrophils, lymphocytes, and red cell parameters (Asanova and Rakov. 1966. Gig. Tr. Prof. Zakol. 5:52; Beischer et al. 1973. NTIS: AD 770140; Bianchi et al. 1973. Arch. Fisiol. 70: 30-32; Bayer et al. 1977. Elektrizitaetswirtschaft 4: 77-81; Cerretelli et al. 1979. In: Symposium D. 241-57; Dumansky et al. 1976. Gig. I. Sanit. 8: 19-23; Free. 1979. U.S. DOE/ TIC-10084; Hauf. 1976. Rev. Gen. Electr. July: 31-47; LeBars and Andre. 1976. Rev. Gen. Electr. July: 91-97; Marino et al. 1976. J. Electrochem. Soc. 123:1199-1200; Marino and Becker. 1977. Physiol. Chem. Phys. 9: 131-147; Marino et al. 1977. Physiol. Chem. Phys. 9: 433-441; Mathewson et al. 1977. NTIS: ADA035955; Meda et al 1972. Presentation of Experimental Results at the Second International Colloquium on the Prevention of Potential Risks Due to Electricity; Phillips. 1980. In Project Resumes: "Biological Effects from Electric Associated with High Voltage Transmission Lines," Contractors Review, U.S. DOE: Poznaniak et al. 1977. J. Microwave Power 12: 41-42; Ragan. 1979. U.S. DOE/TIC-10084.)

Wide and pervasive effects have documented the ability of electricity and magnetic fields to effect metabolic status and growth. These have resulted in the following physiological changes:

Decreased skin thickness; disrupted liver cell metabolism and enzyme levels; altered capacity to form antibodies; effects on microsomal metabolism; altered skeletal muscle metabolism; effects on RNA and DNA synthesis; altered collagen production in fibroblasts; depressed growth and body weight in laboratory animals; alterations in bone growth, fracture repair, osteoporosis; limb regeneration

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(Bassett and Hermann. 1968. J. Cell. Biol. 39: 9a; Bassett et al. 1974. Ann. NY Acad. Sci. 238: 242-262; Becker. 1972c. Nature. 235: 109; Becker and Spadaro. 1972. Bull. NY Acad. Med., 2nd series 48: 627; Cerretelli and Malaguti. 1976. Rev. Gen. Electr. July: 65-74; Fischer. 1973. Z. Bakt. Hyg. I. Abt. Orig. B. 157:115; Harrington and Becker. 1973. Exp. Cell. Res. 76: 95; Klapper and Stallard. 1974. Ann. NY Acad. Sci. 238: 530-42; Kolodub and Yevtushenko. 1973. Ukr. Biokhim Zh. 45: 357; Kolodub and Yevtushenko. 1974. Gig. Tr. Prof. Zabol. 2:11; LeBars and Andre. 1976. Rev. Gen. Electr. July: 91-97; Marino et al. 1976a. Experientia 32: 565-66; Marino et al. 1976b. J. Electrochem. Soc. 123(8): 1199-1200; Martin and Gutman. 1978. Calcif. Tiss. Res. 25: 23-27; McElhaney et al. 1968. J. Biochem I: 47-52; Morris and Ragan. 1979. U.S. DOE/ TIC - 10084; Norton. 1974. Ann. NY Acad. Sci. 238: 466-477; Noval et al. 1976. NTIS: AD A035959; Riesen et al. 1971. Tech Memorandum No. 3, IITRI Project E6185; Rinaldi et al. 1974. Ann. NY Acad. Sci. 238: 307-313; Smith. 1974. Ann. NY Aca. Sci. 238:500.)

Neurophysiology and behavior have also been affected by applied electrical and magnetic fields. Humans have exhibited the following behavioral responses:

1. Altered reaction times and cognitive functions;
2. Headaches;
3. Fatigue;
4. Perceptive awareness;
5. Altered biorhythms.

Pathology. A Soviet study described lesions in several organs related to low strength electric field exposure including dystrophy and vascular changes in the brain, liver, adrenal and thyroid glands and kidneys of laboratory rats (Dumansky et al. 1976. Gig. I. Sanit. 8.: 19-23.) Other animal studies have documented prostatitis, bone tumors and an increase in death rate in response to applied fields.

A study by John Hopkins University may have been the first to correlate human cancer with ELF fields in the normal environment. Another epidemiologic study performed by Wertheimer and Leeper documented an increase in cancer in children who lived near high voltage configurations. (Greenberg et al. 1979. "Effects of high voltage transmission lines on honey bees." In: Symposium D 74-84; McElhaney and Stalnaker. 1968. J. Biomech., 1:47; Phillips and Kaune. 1977. Second Interim Report, Conservation Division, Energy Research and Development Administration; Straub et al. 1972. NTIS: AD 749335; Wertheimer and Leeper. 1979. Am. J. Epidemiol. 109: 273-84.

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Reproduction and Development. Biological effects noted in reproductive and developmental capacities include decreased fertility in various laboratory animals; decreased body weight and increased mortality of offspring of mice exposed to electric fields; and mutagenesis (Bender. 1972. NTIS: PB 197732-F2; Coate et al. 1970. NTIS: 711408; Knickerbocker et al. IEEE Trans. Pow. App. Sys., PAS 86, 498; Krueger et al. 1975. Ann. NY Acad Sci. 247: 391; Marino et al. 1976. Experientia 32: 565; Mittler. 1972. NTIS: AD 749959.

We feel that the DES should reflect and show that at the present time numerous studies are being undertaken in this field and that at the present time there is not enough evidence to conclusively state that the transmission lines, as proposed, would not affect the inhabitants presently living near the transmission corridors.

It is felt by the members of the Society for the Protection of the Environment of Southeastern New Hampshire that these are some areas which should call upon further study by the NRC and should be reflected in a final environmental impact statement.

If you desire any further information on these points, please contact me.

Very truly yours,

Society for the Protection of the
Environment of Southeastern New
Hampshire

By: _____

Robert L. Cheria

RLC/ch