

Attachment E

Letter from Mary Santini, Duke Energy
to
Dr. Steven Cline, NC Dept. of Health and Human Services
requesting information on assessment of public health impacts from thermophillic
organisms from McGuire operation
dated February 10, 2000.



Duke Power Company
Group Environment, Health & Safety
13339 Hagers Ferry Road
Huntersville, NC 28078-7929

February 16, 2000

Dr. Steven Cline
Director
Medical Evaluation & Risk Assessment
Occupational & Environmental Epidemiology
Dept. of Health & Human Services
P.O. Box 29601
Raleigh, NC 27626-0601

Subject: McGuire Nuclear Station
Environmental Report – Operating License Renewal
Thermophilic Organisms

Dear Dr. Cline:

Duke Power Company is preparing an application to the US Nuclear Regulatory Commission (USNRC) to renew the operating licenses for McGuire Nuclear Station. McGuire Nuclear Station is a two-unit plant, located in northwestern Mecklenburg County, approximately 17 miles north-northwest of Charlotte, NC.

McGuire Unit 1 became operational in 1981, and Unit 2 became operational in 1984. The current NRC licenses expire in 2021 (Unit 1) and 2023 (Unit 2). The extended licenses would be for a 20 year period beyond the current license expiration dates. The expiration dates for the extended licenses will depend on the date of the USNRC decision on the license application.

The USNRC requires that an applicant assess certain site-specific environmental issues related to the continued operation of the plant. Among the issues to be evaluated is the impact of thermophilic organisms on public health. Specifically, 10 CFR 51.53(c)(3)(ii)(G) requires that:

If the applicant's plant uses a cooling pond, lake, or canal or discharges into a river having an annual average flow rate of less than 3.15×10^{12} ft³/year (9×10^{10} m³/year), an assessment of the impact of the proposed action on public health from thermophilic organisms in the affected water must be provided.

As part of this evaluation the NRC suggests that the applicant consult with the state agency responsible for environmental health as to whether there is a concern about the potential existence and concentration of *Naegleria fowleri* in the receiving waters for the plant cooling water discharge.

To facilitate your review of this issue, I have included copies of portions of NUREG-1437 Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS). This document was prepared by the NRC to evaluate the impact of environmental issues related to license renewal of nuclear plants and to determine which environmental issues can be evaluated generically and which issues require plant specific evaluation. The Executive Summary and Chapter 1 provide a description of the evaluation process used in the GEIS. GEIS Section 4.3.6 contains an evaluation of the impact of microorganisms on human health. Appendix D to the GEIS provides background information used in the GEIS evaluation. Copies of these sections are included as Attachment 1.

McGuire Nuclear Station uses Lake Norman as a source for condenser cooling water. The heated effluent from the condenser discharge enters Lake Norman through a discharge canal. This canal is 0.6 mile (1 km) long with an average depth of 40-ft (12.2 m). A sketch of the cooling canal area is included as Attachment 2.

The heated effluent mixes initially in the canal with surface waters of the main lake before stabilizing vertically and spreading over the lake surface, ultimately dissipating its heat to the atmosphere. In 1997, the average monthly discharge water temperature ranged from 19.4°C (67.0°F) in February to 36.3°C (97.4°F) in August. The intake water temperature can range from approximately from 5°C in the winter to 30°C in the summer. The highest monthly average temperature change from the station intake to the discharge canal between 1981 to 1984 was 7.1°C (12.8°F) and the average flow is approximately 1873 cfs. The NPDES Permit for McGuire Nuclear Station (NC0024392) lists a 95°F monthly average discharge temperature limit for October through June and a 99°F limit for July through September.

No swimming or boating is allowed in the canal, although fishing is permitted from its banks. Boating, fishing, and water contact activities take place at the confluence of the canal and the lake. The closest privately owned dock is <0.25 mile away. Duke Power Company has never performed a study of *N. fowleri* or other pathogenic organisms in the discharge canal primarily because no health concerns have been expressed over the years of the plant's operation.

Duke Power requests that you review the attached information and respond with your comments on public health concerns you may have regarding the potential presence of *N. fowleri* and other thermophilic organisms in McGuire's discharge canal.

Please feel free to contact me at 704-875-5346 or mmsantini@duke-energy.com if you have any questions regarding this matter.

Thank you for your timely assistance.

Sincerely,

Mary M. Santini

Mary M. Santini
Microbiologist
Group Environmental Health & Safety

Attachments

cc: William M. Miller, GEH&S, Environmental Engineering
Gene E. Vaughan, GEH&S, Scientific Services