

continuous chlorination of both the Circulating Water and Service Water Systems would be advantageous. This strategy was presented in detail within the Operationing License Phase Environmental Report and within the NRC Final Environmental Statement of December 1982. This is also presented within the Final Safety Analysis Report (FSAR) for Seabrook Station (Sections 9.2.1.2 and 10.4.5.2). Following an extensive review by the Environmental Protection Agency, the New Hampshire Water Supply and Pollution Control Division, and the New Hampshire Fish and Game Department of the Station National Pollutant Discharge and Elimination System (NPDES), a permit was issued which allowed for the control of fouling organisms within the systems through the continuous application of low level chlorine.

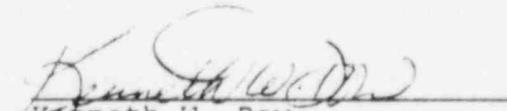
4. Environmental data collected since 1969 has identified the major macrofouling organisms to be the blue mussel (Mytilus edulis) and barnacles (Balanus spp.). The asiatic clam (Corbicula sp.), a fresh water organism, has not been observed within the region through extensive monitoring programs. The blue mussel spawns when water temperature ranges from 10°C to 20°C, roughly May through October. Larvae remain planktonic for 2 to 3 weeks, but this may last as long as several months depending upon the environmental conditions. Settlement onto filamentous algae generally occurs when shell lengths reach 0.01 inches and into adult colonies when shell lengths of 0.03 - 0.06 inches are obtained. Growth following settlement is highly dependent on the environmental conditions of salinity, light, the degree of submergence, water temperature and food supply. Under optimum conditions it could be expected that an annual mussel growth be between 1-2 inches. Barnacle settlement occurs during the spring, with peak settlement found during April. Barnacle growth under favorable environmental conditions is rapid and full size (approximately 0.25 - 0.5 inches) is achieved within a few months.

5. To determine the toxicity of a continuous chlorine discharge to the environment, these fouling species as well as numerous other plant and animal species were evaluated through available literature. Data presented within the 1974 Construction Phase Final Environmental Statement, for example, identified that Mytilus edulis after a 15 day exposure to 1.0 mg/liter of chlorine, experience 100% mortality. Data on barnacles for the same exposure and duration, revealed that a large number of mortalities are also experienced. The original design application of 2 hours per day at discharge concentrations of 0.2 mg/liter to 0.5 mg/liter, however, would require the use of thermal backflushing of the Circulating Water System to achieve biofouling control. It was determined through the evaluation, that the continuous application of chlorine and

the maintenance of residual of 0.2 mg/liter would provide sufficient biocide presence to provide an environment hostile to larval attachment. This ensures that the cooling water systems will be maintained free from fouling while protecting the balance of indigenous populations within the receiving waters.

6. The NPDES permit jointly issued by the EPA and State of New Hampshire, also requires that a Chlorine Minimization program be conducted. This program is designed to evaluate the least amount of chlorine application (and subsequent discharge to the environment), while maintaining the cooling water systems free from fouling. This program therefore mandates the periodic evaluation and inspection of cooling water system components to evaluate fouling control. These inspections provide periodic review and assurances that critical systems are not impacted by fouling organisms. The on-site application of chlorine and subsequent inspections of cooling water system components have revealed, to date, no accumulation of fouling organisms.

7. Fresh water is supplied to Seabrook Station from artesian wells within the town of Seabrook potable water system. Other sources of fresh water during the construction of Seabrook Station include three production wells located onsite and four bedrock wells located approximately one-half mile from the site at Brimmer Lane in Hampton Falls, New Hampshire. Treatment of make-up water occurs prior to its distribution to plant systems. This involves chlorination, filtration, dechlorination, demineralization, and UV sterilization. As all potable water utilized onsite is obtained from groundwater resources, there is no macrofouling component available for fouling of plant systems. In addition, as a result of water treatment, the microfouling potential is for all practical purposes eliminated.


Kenneth W. Dow

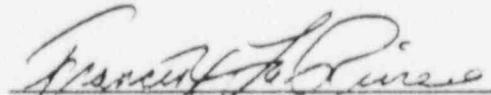
COMMONWEALTH OF MASSACHUSETTS

Middlesex ss.

April 28, 1988

The above-subscribed Kenneth W. Dow appeared before me and made oath that he had read the foregoing affidavit and that the statements set forth therein are true to the best of his knowledge.

Before me,


Notary Public
My Commission Expires: 10-16-92

STATEMENT OF PROFESSIONAL QUALIFICATION
KENNETH W. DOW

I received a Bachelor of Science degree in Wildlife Management from the University of New Hampshire in 1976 and a Master of Science degree in Environmental Studies from the University of Lowell in 1984. I have ten years of experience as a scientist having primary focus in the areas of environmental impact assessment, biological sampling, and permitting. I have been employed at Yankee Atomic since early 1977 and have been involved during this time with various industry groups on issues of environmental analysis, permitting, and study. My current position involves the oversight of environmental activities for sponsor companies of Yankee Atomic. For Seabrook Station, I currently manage biological studies and consultants as mandated by the National Pollutant Discharge and Elimination System (NPDES) permit jointly issued by the Environmental Protection Agency (EPA) and the New Hampshire Water Supply and Pollution Control Division. My experience with the use of chlorine (sodium hypochlorite) as the desired means for preventing biological growth and subsequent fouling of the Seabrook Station Circulating Water and Service Water systems began in 1981, through the preparation of an analysis of the potential effects of continuous chlorination during station operation.