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VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

August 18, 1978

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
Attn: Mr. Albert Schwencer, Chief  
Operating Reactors Branch 1  
Division of Operating Reactors  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Serial No. 475  
LQA/JEE:jal

Docket Nos. 50-280  
50-281

License Nos. DPR-32  
DPR-37

Dear Mr. Denton:

ADDITIONAL INFORMATION  
TECHNICAL SPECIFICATION CHANGE REQUEST NO. 49  
SURRY POWER STATION

By letter dated May 16, 1977, Vepco requested a change to the Technical Specifications concerning the non-radiological environmental monitoring of the James River in the vicinity of Surry Power Station. Vepco has since received a request for additional information (telecon, August 14, 1978) from Messrs. Neighbors, Wilson and Cane of the Staff. Our response is attached.

We feel that fifteen months is an excessive amount of time for a license change request to be under review. Your approval is needed within 45 days to avoid additional, and unnecessary cost.

Very truly yours,

*C. M. Stallings*

C. M. Stallings  
Vice President-Power Supply  
and Production Operations

Attachment

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INQUIRY:

The Licensee has not provided assurances that the Ristroph screens will continue to serve as the most non-selective fish sampling device available or that they will continue to provide data which indicates the relative abundance of populations in the river.

A means of verification of the screen data should be provided through a river sampling program or a demonstration that data are available from other sources.

RESPONSE:

The James River is one of the major tributaries of the Chesapeake Bay and, as such, is used extensively by aquatic life as well as man. Because of its importance to the Bay ecosystem, the James has been the object of numerous studies over the years, studies conducted by a myriad of investigators for a myriad of reasons.

The Virginia Institute of Marine Science (VIMS) has conducted structured fish studies in the James River since the early 1960's. These studies, financed by both federal and state funds (e.g. P.L. 89-304), consist of monthly trawl surveys, winter trawl surveys, and semi-monthly beach seine surveys. Blue crab surveys in the river also collect fish data. The prospects for continuation of these studies are excellent. These studies were augmented in 1970 through monthly seine and trawl surveys by Vepco around the Surry Power Station (Anon., 1976). The data were recently combined in the form of a (316(a)) demonstration that proved conclusively that the Surry Power Station thermal effluent and hence Station operations were not having an impact on fish populations in the James River. The demonstration findings received concurrence and approval of both the Environmental Protection Agency and the Virginia State Water Control Board on January, 1978.

As has been stated previously, the James River has been utilized by man for many purposes ranging from recreation to a waste repository. The latter use has presumably resulted in numerous fish kills and the temporary demise of certain indigenous species (St. Pierre and Hoagman, 1975). The ecosystem is resilient, however, and data for 1977 and 1978 (both VIMS and Vepco) show that white perch, hogchoker, and striped bass, for example, have rebounded in the James River with apparently extremely strong year classes. These year-classes were successful despite relatively heavy body burdens of the pesticide Kepone.

Nature functions in this manner. For example, a suspected epizootic in the Potomac River in 1963 killed hundreds of millions of white perch (St. Pierre and Hoagman, 1975). It was estimated that 50-60% of the population was destroyed (Sinderman, 1970 in St. Pierre and Hoagman, 1975). Today, white perch are among the most numerous of all species inhabiting that river.

All of these data point to several inescapable conclusions: (1) the fishes of the tidal James River were being studied prior to operation of the Surry Power Station, have been studied for six years during operation, and will be studied for years to come with or without Vepco involvement; (2) natural and catastrophic fluctuations in abundance are and can be detected using non-Vepco programs presently underway; (3) except for substantiating and otherwise confirming long-term trends in relative abundance or catastrophic declines in certain populations residing in the Surry area, additional sampling programs are not warranted. To date the ongoing non-Vepco programs have adequately shown the increase, decline, and stability of fish populations in the tidal James River.

LITERATURE CITED

Anonymous, 1976. The effects of Surry Power Station operations on fishes of the oligohaline zone, James River, Virginia. Virginia Electric and Power Company manuscript, v + 37 pp.

St. Pierre, R. A. and W. J. Hoagman, 1975. Drastic reduction of the white perch, Morone americana, population in the James River, Virginia. Chesapeake Science 16(3): 192-197.

INQUIRY: The Licensee should describe the field studies that will be initiated if the screen studies yield atypical data.

Provide information on the studies that will be initiated.

RESPONSE: With the installation of the Ristroph traveling fish screens at Surry Power Station, fish impingement problems became non-existent. Data indicated an overall average survival rate in excess of 93% (White and Brehmer, 1976), a figure that has been upgraded to 95% in recent years. Experience has shown through the years that when survival percentages fall below about 75%, the cause can be traced to a sudden influx of the very young late postlarvae or early juveniles of one or two species. The reduced survival is usually of short duration, lasting only a few days, at most.

When such a reduced survival occurs (survival of all species < 75% for the day sampled) a special sampling program will be instituted. Along with daily screen samples, duplicate beach seine samples will be taken on either side of the intake and trawl transects will be made using the intakes as a focus (10 minute tows 45°, 90°, 135°, out from the intakes). Program duration will be governed by the duration of the reduced survival. By determining the relative volume of water strained by the nets, a figure can be derived that gives the relative number of any species per unit volume. This number can then be compared with fish killed per unit volume of water pumped to determine the relative impact.

LITERATURE CITED

White, J. C., Jr. and M. L. Brehmer, 1976. Eighteen-month evaluation of the Ristroph traveling fish screens. Third National Workshop on Entrainment and Impingement. L. D. Jensen, editor. pp. 367-380.