Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, Virginia 23060

December 11, 1995

VIRGINIA POWER

Camille S. Cook
Department of Environmental Quality
Piedmont Regional Water Office
P. O. Box 6030
Glen Allen, VA 23058

RE: SURRY POWER STATION - VPDES PERMIT NO. VA0004090

Dear Ms. Cook:

This is to request approval of a proposed minor change in the nature of an internal discharge at Surry Power Station. We are not requesting modification of the current VPDES permit. The discharge that is the subject of this request is Outfall 101, the Settling Pond.

In the application for the current permit, hydrazine was identified as a constituent of the discharges at Outfall 101. It was stated that, prior to discharge from the station sumps to the Settling Pond, hydrazine removal by hydrogen peroxide or calcium hypochlorite would reduce the hydrazine concentration to less than the detection limit of 2 ppb. Changes in other operating parameters within the station systems have made complete neutralization of the hydrazine prior to the Settling Pond extremely difficult and impractical.

In order to allow for more efficient and practical operation of the station systems, we will need to allow a higher concentration of hydrazine in the Settling Pond and in the effluent from the Settling Pond to the Discharge Canal. Back calculating from a detection level of 2 ppb hydrazine at the end of the Discharge Canal, the dilution afforded by the volume of cooling water flow relative to the Settling Pond discharge rate will accommodate a hydrazine concentration of 96 ppm at Outfall 101. These data do not take into account the reaction and decomposition that hydrazine would undergo in the Discharge Canal.

In actual application, the dilution of the hydrazine by the cooling water flow will be a moot point because of the nature of hydrazine. Under conditions that provide adequate aeration and mixing, hydrazine completely decomposes to nitrogen gas and water. Outfall 101 discharges to the head of the Discharge Canal where a very large volume of water is vigorously mixed and, through that mixing, is highly aerated. In the environment of the Discharge Canal, it would be expected that any hydrazine in the Settling Pond effluent would be almost instantaneously reacted. Due to the relative volume of the Settling Pond discharge with respect to the cooling water flow in the Discharge Canal and the tremendous amount of mixing and aeration, the oxygen uptake from the hydrazine reaction would be negligible.

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We believe that the discharge of hydrazine at higher concentrations through the Settling Pond would pose no danger to the safety of human health or the environment as the final discharge to state waters at Outfall 001 will be below detectable levels, and far below any toxic level. Under the conditions of the current VPDES permit, it appears that an increase of hydrazine in the effluent of Outfall 101 to the 96 ppm level would be acceptable as a minor change. Your concurrence on this would be appreciated.

Should you desire additional information or have any questions, please contact Daniel James at (804)273-2996.

Sincerely,

for J. W. White
Director
Environmental Compliance - Water/Waste

cc: U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., NW
Suite 2900
Atlanta, GA 30323
Re: Surry Units 1 & 2
Docket Nos. 50-280/50-281
License Nos. DPR-32/DPR-37

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
Re: Surry Units 1 & 2
Docket Nos. 50-280/50-281
License Nos. DPR-32/DPR-37

Mr. M. W. Branch
NRC Senior Resident Inspector
Surry Power Station