GE Corporate
Environmental Programs

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RE: HUDSON RIVER DATA COLLECTION PROGRAM

Gentlemen:

The General Electric Company (GE) has been investigating the fate of PCBs in the Hudson River for a number of years. It is now apparent that the amount of PCBs in the water in Thompson Island Pool (TIP) is much greater than can be explained by PCB diffusion from the so called "hot spots" and the PCBs entering the TIP at Rogers Island. We have documented the scientific rational for this conclusion in a number of papers that have been submitted to Federal and State agencies, as well in our comments on the EPAs Preliminary Model Calibration report. We are also in the process of preparing additional analysis of this issue as a result of the release of the EPA's Data Interpretation and Evaluation Report. It was to deal with the high apparent loading from the TIP sediments that EPA's modeling report hypothesized a ground water influx to drive PCBs from the sediments to the water column. Similarly, in the data report, erosion is hypothesized in order to expose buried sediments to the water column. Neither of these hypotheses is well tested or persuasive. EPA has not tested for the presence of ground water influx or explained why such influx would occur in the TIP but not downstream. The erosion hypothesis is at odds with the side scan sonar and other bathymetry work EPA has carried out.

EPA's technical team appears to believe that the "hot spot" deposits are the most significant source of PCBs to the water in the TIP. Due to the importance of knowing which sources are responsible for the TIP loading in selecting the appropriate remedial option for the Hudson River-- one that will result in a reduction of PCB levels in fish to acceptable levels-- we are embarking on an intensive data

collection program to shed further light on this issue. We welcome and encourage your participation in this effort and request your views on the design of the outlined programs or suggestions for any other activities that would address the issues.

Over the next few months, GE will be implementing the following research and monitoring program:

HIGH FLOW MONITORING PROGRAM

One hypothesis for the elevated loading from within the TIP is that more PCBs are entering the TIP than are actually measured during the routine monitoring. A possible mechanism for this to occur is that, during low flow periods, seepage of dense oils containing PCBs, which have been observed in the river at Hudson Falls, accumulate on the river bottom. These are moved downstream during the spring high flow periods and a portion of these PCBs are deposited in the TIP surface sediments. Elevated levels of PCBs, originating upstream of Rogers Island, have been detected during previous spring high flow events. For instance, in the data report, EPA reports that in 1993 approximately half of the total mass of PCBs passing Rogers Island passed this monitoring point during spring high flows. Enclosed is a work plan prepared by HydroQual Inc., and O'Brien & Gere Engineers to monitor the levels of PCBs coming into and out of the pool during this spring's expected high flow, [1997 High Flow Monitoring Program - Upper Hudson River - March 1997]. Samples will be collected hourly during the rising limb of the flow hydrograph. Additionally, sampling devices will also be deployed to try to capture sediments and possibly oils that might be present in the sediment moving along the bottom as a bed load.

We will also conduct detailed monitoring of the suspended solids loadings. The current data show that contributions of solids from the tributaries to the main stream Hudson are significant and result in net sediment deposition in the TIP as opposed to erosion. While the data set collected by Dr. Richard Bopp in 1994 confirms this, flow measurements from the tributaries the TIP were not obtained. The water flow is necessary to complete the sediment mass balance. Additionally, sediments from the tributaries and the main stem of the river will be collected and their grain size distribution characterized so the movement of the material can be better predicted The measurement of tributary solids will continue well past the main spring flow event in the Hudson so the impact on sediment loading from these tributaries from localized hydrologic events (e.g., thunderstorms) can be determined.

GROUND WATER SEEPAGE INVESTIGATION

In EPA's Preliminary Model Calibration report it is proposed that advective movement of ground water through the sediments into the Hudson River might partially explain the loading of PCBs into the water column within the TIP. The magnitude of the assumed ground water flux was not constrained by any site specific data. Additionally, the movement of ground water through the sediments was only assumed to occur in the TIP. To test the appropriateness of this mechanism as a possible cause of a portion of the PCB loading into the TIP, a program for measuring the ground water flux through the sediments has been developed. Enclosed is the work plan entitled Investigation of Ground Water Seepage in the Thompson Island Pool Section of the Upper Hudson River. This plan was prepared by HydroQual Inc., HSI (formerly GeoTrans), and O'Brien & Gere Engineers.

HYDROFACILITY MAINTENANCE MONITORING

Another possible mechanism for PCBs to enter the TIP undetected is the routine cleaning of the trash racks at the hydroelectric facility at Bakers Falls, located adjacent to the GE Hudson Falls site. During this cleaning process a water bypass structure is used that discharges significant amounts of water into the plunge pool at the base of Bakers Falls. This has been observed to change the plunge pool from a quiescent lake-like setting to one with more turbulent conditions. Seepage of PCB-containing oils has been discovered within the plunge pool. These oils are denser than water and would tend to accumulate on the river bed until washed downstream when river flows increase. The movement of water into the plunge pool during the cleaning of the trash racks is one potential mechanism for moving PCBs downstream in pulses that would not be detected by routine monitoring unless the monitoring was timed to coincide with the cleaning of the trash racks. During the fall of 1996, one round of monitoring was conducted to coincide with this cleaning and was intended to monitor the potential movement of a pulse of PCBs downstream. The results show elevated PCB levels in the river. As a result, this monitoring will be continued this year. Monitoring of PCB levels in the river timed to coincide with the hydrofacility trash rack cleaning will occur every two weeks. Enclosed is a work plan describing this monitoring entitled, Hydrofacility Monitoring Program, prepared by O'Brien & Gere Engineers.

In addition to the monitoring described in the enclosed work plans, GE is continuing its weekly monitoring of the PCB levels in the river at Fenimore Bridge, Rogers Island and the Thompson Island Dam (TIP). We will also conduct additional "time of travel" surveys through the TIP as soon as the high spring flows subside. This coincides with the period of maximum PCB loading from the TIP observed in the 1990's monitoring data. The anticipated cost of the monitoring and research programs outlined in this letter exceeds $500,000

As we have in the past, we invite your involvement and input on these programs. We will be glad to meet with you at your convenience to discuss the programs in more detail and welcome input on suggested changes or additions. We truly believe that a cooperative, combined effort, that is subject to candid debate and discussion is the best way to try to resolve the important issues that face us. However, GE must move ahead to address these issues and will implement these programs in their present form if we do not receive additional input. Determining the sources of PCB to the TIP water column load is a necessary prerequisite to completing the PCB fate and transport model, which in turn is needed to evaluate the ability of remedial options, including natural recovery and institutional controls, to control risks that may be present at the site.

If you have any questions please let me now. Please place this letter and work plans into the administrative record for the site.

Yours truly,

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cc: Richard Caspe, US EPA
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