GE Corporate
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VIA FACSIMILE & FEDERAL EXPRESS

July 20, 1998

Mr. Damien Hughes
USEPA Region II
290 Broadway, 20th Floor
New York, NY 10007

Re: Preliminary Model Calibration Report: Peer Review Questions

Dear Mr. Hughes:

In response to your July 1 letter, General Electric Company ("GE") is pleased to submit the enclosed questions to be included with the "charge" provided to the Peer Review Panel for the Preliminary Model Calibration Report ("PMCR").

GE is pleased that the Agency is providing the public with this opportunity to participate in the development of the peer review charge. EPA, however, did not provide enough time to prepare questions. GE first learned of this opportunity at the July 15, 1998 Hudson River Superfund Site Overnight Committee meeting in Kingston, New York, providing us only two working days to prepare questions. I trust that for future peer review panels, EPA will provide additional time for parties to provide questions.

GE again urges the Agency to provide the peer reviewers all technical comments on the PMCR in order to acquaint the peer reviewers with the issues in dispute. GE agrees that the focus of peer review should be an assessment of EPA's science. Providing the peer reviewers with the technical comments of GE and others will not turn the peer review process into an assessment of "whose science is better". To the contrary, these comments will assist the peer reviewers by focusing their review on the critical issues and thus assess the adequacy of EPA's science.

Please include this letter and the enclosed questions in the Administrative Record for the Site, as well as the Peer Review record.

Sincerely,

Melvin B. Schweiger

cc: Richard Caspe
William McCabe
Mel Hauptman
Doug Tomchuk

Enclosure re: Peer Review Questions July 20, 1998

1. The USEPA has developed three questions (see page E-1 of Volume 2B) whose answers provide the information necessary to make an informed decision regarding remediation at the Hudson River PCB Superfund Site. These questions pertain to future conditions in the river. Thus, predictions are needed. EPA has chosen to use certain models as the means to make these predictions. Please comment on the adequacy of these models and actions that could be taken to increase their accuracy and utility.

2. The Transport and Fate model predictions depend on processes occurring on various temporal and spatial scales. Data are available to test the model at these various scales. Sediment PCB data have been collected in 1977, 1984, 1991 and 1994. Water column PCB levels have been measured routinely since 1977. Also special studies have been conducted examining high flow events. Please review the plans for model calibration/validation and comment on their adequacy to test the accuracy of the model as a tool for predicting future conditions.

3. One goal of the model is to simulate remedial actions that include natural recovery, source control, enhanced natural recovery, small-scale capping or sediment removal and large-scale capping or sediment removal. This may require the ability to simulate remedial actions in areas as small as a few acres. Please review the spatial resolution of the model and comment on its adequacy for application to the scales of potential remedial actions.

4. The Transport and Fate model treats resuspension as a continuous process that occurs at all river flows. Rates are established through calibration to suspended solids data at various flows. Please comment on this approach and its impact on the accuracy of model predictions.

5. EPA has attempted to account for groundwater inflow by data extrapolation. Please review the procedures used in this extrapolation and comment on their appropriateness and accuracy.

6. EPA has chosen to use different formulations to describe sediment transport in its Transport and Fate and Thompson Island Pool Depth of Scour Models. Please comment on the two formulations and on how differences between them affect the compatibility, consistency and accuracy of the two models.

7. EPA has used a bounding calculation to estimate the erosion of non-cohesive sediment that would occur in a 100-year flood. Please review this calculation and comment on the likely impact of overestimation on the model results. Also comment on the approach used in the Transport and Fate model to simulate non-cohesive sediment transport.

8. EPA has chosen particular procedures to analyze data in order to establish the sediment PCB initial conditions, boundary conditions for upstream and tributary inflow and solids loading and boundary conditions for PCBs. Please review these procedures and comment on their appropriateness and accuracy.

9. EPA has chosen a particular value for the depth to which surface sediments are mixed, i.e., the "well-mixed layer." Please evaluate the data supporting the chosen value and comment on the accuracy of the chosen value.

10. EPA has chosen three approaches to developing a predictive model of PCB concentrations in fish. Two statistical models have been developed (the Bivariate Statistical Model and the Probabilistic Bioaccumulation Food Chain Model). The third approach is a mechanistic time-variable dynamic simulation model that is in the initial stages of exploration. PCB measurements are available for three key species of fish over a 15-20 year period in two locations with different exposure concentration (Thompson Island Pool and Stillwater). Exposure concentrations have exhibited long-term trends and extreme short-term variability. Please comment on the strengths and the limitations of the statistical and the dynamic approaches, particularly focusing on their use to predict responses of biota to changes in exposure conditions.

11. EPA has proposed a food web structure to be used to develop the mechanistic model. Please review this structure and the data supporting it.

12. The predictive capability of the statistical models depends on the absence of model bias, as indicated by the distribution of residuals as a function of the magnitude of the independent variables. Please review the comparison of the model and data and comment on the likely accuracy of the model predictions.

13. One goal of the PBFCM is to predict within-population variation in PCB concentration. Please review the model structure and the procedures used to estimate parameter values and comment on the ability of the model to predict the distribution of PCB levels within the population.