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To: R2NYC04.R2OSWSF1(TOMCHUK-DOUG)
Date: 12/20/99 7:31pm
Subject: Peer Review Charge

Doug--

Here a few suggestions for charge questions for the upcoming Peer Review for the BMR.

Jay

There are a number of aspects of the Hudson River system that the models are unable to address. For example, the Depth of Scour model does not address sediment resuspension or redistribution resulting from debris (including large rocks, trees and root masses), bank erosion, or ice scour during high flow events. Daily changes in water level that are associated with hydropower generation may act as a regular tidal action in shallow nearshore sediments, which may increase the release of PCBs to nearshore foodwebs. Temperature in the shallow nearshore areas, during the summer low flow period may be higher than the mid-channel, which would affect temperature-dependent partitioning. Do any of these factors have the potential to significantly affect PCB loading to the river that is not accounted for by the models?

With the exception of the high resolution core sediment data, which represent highly unusual locations where the radionuclide data indicate that continuous deposition occurs, very little information on the vertical distribution of PCBs in the TIP sediments is available. How important is this lack of information on the vertical distribution of PCBs in the sediments in evaluating the predictive ability of the models?

Have the observed differences in PCB composition and concentration in fish along the geographic gradient downstream from the TI Pool been sufficiently replicated by the model to demonstrate the models' predictiveness?

Have the assumptions made in the bioaccumulation modeling (e.g. depth of bioturbation, use of summer average water column exposures, fish diets, growth rates) generated a reasonable estimate of fish concentrations on a total (tri+) and specific congener basis?

Is it reasonable and appropriate to invoke the particle-mediated transfer of PCBs to achieve observed water column congener ratios (e.g. are there other mechanisms to consider)?

Are the model results consistent with the findings of the Low Resolution Core Report that there has been a 40% loss of PCB inventory from highly contaminated sediments in the TI Pool?

How well have the uncertainties in the fate and transport model and bioaccumulation model been addressed and how important are they to the predictiveness of the models and to the use of outputs as inputs to the human health and ecorisk assessments?

What types of monitoring data would be most useful to verify model predictions?

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