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3.0 Evaluation of Stack Emissions

Section 3.1.3.5 (pp 3-17 & 3-18) Health Effects Criteria for Chemical Mixtures and for Chemicals with Varying Forms.

The consultant should have used the U.S. EPA TEFs for the PCDD/PCDF assessment, not the NATO TEFs. The NATO TEFs yielded a more conservative dioxin risk assessment within this specific exposure scenario; the actual differences are quite small.

COMPARISON OF THE NATO VS U.S. EPA TEF'S

	<u>Conc. (pg/m³)</u>	<u>Risk Value</u>
NATO TCDD- COAL	3.43 E-08	1.13 E-12
NATO TCDD- HWF	1.01 E-07	3.32 E-12
U. S. EPA TCDD- COAL	8.59 E-09	2.83 E-13
U. S. EPA TCDD- HWF	2.49 E-08	8.23 E-13

Section 3.1.3.2. (pp 3-9 to 3-11) Health Effects Criteria for Non-Carcinogenic Effects.

The consultant did not use lead exposure methodology consistent with currently accepted procedures. The consultant should be advised that Uptake/Biokinetic Model version 0.50 for lead is the preferred version.

Section 3.1.3.4 (pp 3-15 to 3-17) Health Effects Criteria for Chemicals Exhibiting Route-Specific Effects.

ECAO should have been contacted for guidance on the appropriate methods for evaluating dermal exposure for specific chemicals. Appendix A of the Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual (Part A), Adjustments for Absorption Efficiency, suggests ways to calculate the adjustments in absorption to fit the dermal route-of exposure.

Section 3.1.3.6 (pp 3-19 to 3-23) Evaluation of Chemicals Lacking U.S. EPA - Developed Health Criteria.

The consultant should have used Interim Methods for Development of Inhalation Reference Doses (EPA/600/8-88/066F, August 1989), to develop the RfCs missing from the IRIS and HEAST data bases. The use of NAAQS and the New York State Department of Environmental Conservation Guidance (NYSDEC 1991) is not consistent with the deviation of the RfC numbers used in the risk assessment.

Section 3.1.3.7 (pp 3-23 to 3-26) Dose - Response Values for PCDDs/PCDFs.

The consultant assumes that the re-evaluation of the dioxin unit risk by U.S. EPA will be less conservative. There is still great debate as to whether dioxin acts via a receptor-mediated complex: recent findings have indicated that dioxin's effects may, in fact, not be caused via the Ah-receptor. U.S. EPA is, however, re-evaluating the multistage linear model based assessment in favor of a dose-response based assessment. William K. Reilly, U.S. EPA Administrator, has advised the agency to proceed with ongoing activities related to dioxin under the currently accepted IRIS numbers.

Section 3.2.2 (pp 3-46 to 3-48) Air Dispersion Modeling.

The receptor distances in both the accidental spill and the stack emission modes of the dispersion model appear to be within a 10² km² area. The exposure assessment, if limited to this dispersion area, would almost certainly miss the surrounding population centers in Greene and Clark Counties.

Section 3.3.3.2 (pp 3-75 to 3-77) Inhalation.

The assumption that indoor concentrations of air toxics is likely to be less than outdoor air is not correct (National Research Council 1991). The standard practice of using equal indoor and outdoor concentrations is, however, still acceptable.

Section 3.4.2 (pp 3-94 to 3-96) Individual Risk Estimates, Table 3.4-1 Comparison of Risks Associated with Burning Coal Only or Coal Supplemented with HWF at the SWPC Facility.

Ohio EPA's Review of New Sources of Air Toxic Emissions (proposed) has been misinterpreted by the consultant. Ohio EPA recommends that the maximum individual risk for any single carcinogen emitted from a new source not exceed 1 E-5. This site is not a "new source" and the consultant's application of this draft policy is to a complex mixture of air toxics.

Section 3.4.2.2 (pp 3-97 to 3-98) The Potential for Noncancer Effects.

Total Non-Carcinogenic Hazard Indices in the maximally exposed individual (MEI) under the coal-fired scenario approached unity and under the HWF scenarios exceeds unity [Note: exposure assessment does not include the fugitive emissions figures which, when added to the stack emissions, would put the MEI over unity].

The consultant should have segregated the air toxics by health effects end-points and not used the "Plausible Upper-bound" scenario. The consultant has not demonstrated that segregation of Hazard Indices by

health effect has been done or reviewed by ECAO (as specified by U.S. EPA guidelines). The consultant has not made a strong case for the exclusion of additive does.

4.0 Evaluation of Fugitive Emissions

Section 4.1.1 (p 4-2) Selection of Chemicals of Potential Concern.

The consultant assumes that the HWF constituents will be consistent from batch to batch; the concentrations and/or make up of these constituents may exceed the modeled figures. I would like to see batch testing prior to the incineration of HWF to insure that these concentrations actually form the upper limits.

Section 4.1.3 (pp 4-2 to 4-9) Health Effects Analysis.

Ohio EPA does not recognize the use of surrogate chemicals as outlined in Enviro Technical Information for Problem Spills (TIPS): Naptha (Environmental Protection Service, 1985). The consultant was vague as to the method by which surrogate chemicals were selected; it-would have been more consistent to use the methods outlined in Section 3.1.3.

5.0 Evaluation of Acute/Accidental Risk Scenarios

Section 5.1.1 (pp 5-2 to 5-4) Storage Tank Spill.

A major spill could potentially qualify this site for SARA requirements defining the excavation radii.

Section 5.4.2 (pp 5-25) Storage Tank Rupture and Fire.

Evaluation of the inhalation scenario as a result of a catastrophic accident such as a major spill and/or fire should have been modeled for longer than one hour maximum exposure; it is likely that a fire in one tank would lead to a subsequent, not simultaneous, catastrophic release from either or both of the remaining tanks. Therefore, the emission rates may not be realistic, and environmental concentrations understated given the time constraints used in dispersion model.

Section 5.4.3 (pp 5-27 to 5-29) Identification of Receptors of Potential Concern.

The consultant's reliance on avoidance behavior by potential receptors represents a tenuous argument and illustrates a lack of a clear understanding of the potential ecological impacts; clearly avoidance by aquatic species is limited and avoidance is not an option for plant life.

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The risk assessment for SWPC's site is very thorough and appears to delineate the upper bound risk limit for the MEI. The fact that the total non-carcinogenic hazardous indices under the coal-fired scenario approaches unity and under the HWF scenario exceeds unity is of concern. Consultant should demonstrate the segregation of hazardous indices by effect and address the other issues brought out by this review.

Should you have any questions, I can be reached at (614) 644-3700.

DN/BH/mm1

cc: Paul Koval
Bruce Weinberg