DRAFT MINUTES

NJDEP Science Advisory Board Public Health Standing Committee

October 18, 2010, 10:00 AM – 12:00 PM
New Jersey Department of Environmental Protection
Trenton, NJ

Members Present: Mark Robson (Chair), Michael Greenberg, Clyde Johnson, Gerald Kennedy, Howard Kipen, Judith Klotz, Mark Maddaloni, Steven Marcus, Clifford Weisel

Members Absent: Joseph Mitala, Judith Zelikoff

Non-members Present: Standing Committee Liaisons Alan Stern (NJDEP Office of Science) and Gloria Post (NJDEP Office of Science): Linda Cullen (NJDEP Site Remediation Program), Allan Motter (NJDEP Site Remediation Program)

Mark Robson called the meeting to order at 10:00 AM.

Mark Robson clarified that the over-arching role of the committee will be to apply the expertise and guidance of its members to work done (or to be done) by the DEP-SAB staff and supporting program staff on the committee's behalf.

Mark Robson requested that Clifford Weisel act as Deputy Chair of the committee in Dr. Robson's absence. Dr. Weisel agreed.

Gloria Post gave a presentation on the development of health-based standards and criteria at NJDEP in general in order to provide a context for the committee's future considerations. The presentation referenced the types of health-based standards and criteria developed by NJDEP, differences between criteria and standards, and the risk assessment approaches used by NJDEP regarding exposure assumptions used, risk assessment approaches for cancer and non-cancer-based adverse effects, dose-response modeling, approaches for dealing with uncertainty, and sources of toxicity factors used as the basis for standards and criteria. Her presentation is posted online at:

http://www.state.nj.us/dep/sab/minutes/sab%20stds%20overveiw_1.pdf

The committee discussed the extent to which it can exercise latitude in self-identifying areas for its review. Mark Robson and the NJDEP liaisons clarified that the committee's charge is limited to the specific questions and charges identified by the NJDEP programs and approved by the NJDEP Commissioner, but that the committee could identify related issues requiring their consideration as required to appropriately address the original questions presented to them.

Development of Acute Soil Ingestion Standards

Linda Cullen of the Hazardous Site Science element of the NJDEP Site Remediation Program (SRP) presented a PowerPoint on health-based acute soil ingestion criteria, the issue identified by Commissioner Martin as the priority issue for the committee's review. Her presentation is posted at:

http://www.state.nj.us/dep/sab/minutes/sab-acute.pdf

She identified three needs that these acute soil criteria are intended to fill:

- short-term decision making – e.g., beach openings for a short time period
- guidance for maximum acceptable concentration of contaminants below site caps based on a cap failure scenario

- prioritization of site remediation decisions e.g. Immediate Environmental Concern (IEC) determinations

Currently, SRP has developed acute criteria for a subset (21) of the 138 chemicals for which they are needed based on ATSDR Acute (1-14 day exposure) Minimum Risk Levels. One question for the committee is whether there are other sources of short term toxicity information appropriate for the development of acute soil criteria. For example, USEPA has developed One Day and Short Term Drinking Water Health Advisories, and their toxicity basis could be considered as an information source for acute soil criteria.

A committee member suggested that the USEPA has developed a database of acute exposure guidelines that could be applicable for SRP's purposes. However, it was pointed out that these guidelines are for airborne concentration and inhalation exposure while SRP is primarily concerned with soil concentrations and the direct contact (ingestion/dermal) pathway. It was also pointed out that SRP does not believe that there are currently adequate soil-to-air transport models that are applicable over acute exposure periods.

With respect to the charge questions for this topic, there was a discussion among the committee members about the applicability of subchronic MRLs and/or chronic/lifetime cancer potency estimates for short-term exposure scenarios. One committee member expressed that opinion that while such potency estimates may not, technically, be directly applicable to short-term exposures there is justification for using them in the absence of other, more applicable values. One of the OS liaisons suggested that Calabrese at U. Mass had done work on extrapolating long-term cancer potency factors to short-term exposures.

There was also discussion about whether soil ingestion is the most relevant and appropriate exposure pathway for acute soil criteria. It was discussed that inhalation and/or dermal exposure may also be important to consider.

With respect to short-term exposure guidance for lead in soil, the committee discussed that the current USEPA-IEUBK model for lead is not applicable to the prediction of blood lead from short term exposures. It was pointed out that the USEPA is currently working on an All-Ages Lead Model that is intended to also address short-term exposures, but that the model had not yet reached a stage of development where it would be useful for predicting such short-term relationships. One of the OS liaisons suggested that empirical intake-blood lead data previously used to develop acceptable soil lead concentrations as an alternative to the IEUBK model might be applicable for consideration of short-term exposures. It was also discussed that the uncertainties about the adverse effects of term exposures to lead are at least as great as or greater than the uncertainties about internal dose resulting from such short term exposures.

With respect to the soil charge question about development of a short term criterion for elemental mercury in soil, one of the committee members suggested that since the exposures of concern for elemental mercury are almost entirely focused on inhalation and since models for such inhalation in outdoor settings are not available or applicable, it might make more sense to forego acute standard setting for elemental mercury in soil, and instead rely on sensitive on-site surveys using a portable Lumex (as opposed to Jerome) monitor and to consider any significant exceedence of background to be unacceptable. Linda Cullen stated that Licensed Site Remediation Professionals will now be evaluating contaminated sites, and that they may not necessarily have access to equipment such as a Lumex monitor.

Mark Robson ended the discussion of this topic and stated that the committee will address the charge questions based on the current discussion.

Perimeter Air Monitoring

Allan Motter of the Hazardous Site Science element of the NJDEP Site Remediation Program presented a brief explanation of the Perimeter Air Monitoring topic. His presentation is posted at

http://www.state.nj.us/dep/sab/minutes/PAM%20SAB%20Presentation.pdf

This issue relates to guidance relating to the monitoring of levels of vapors and particulates in air as a result of remedial activities at a contaminated site. He identified several key issues for the committee's consideration:

- What is the appropriate time-frame over which perimeter air monitoring should be used?
- Should non-cancer endpoints be used as the basis for evaluating the acceptability of monitoring results in preference to cancer endpoints (when the chemicals of concern are carcinogens) given the relatively short time-frame of exposure?
- Should all contaminant action levels be calculated considering the contaminant to be both a vapor and a particulate with the most conservative action level chosen, or should certain contaminants be considered as only a vapor or particulate?
- What considerations should be given to situations where the calculated action levels are lower than standard best management practices can achieve given that remediation within an enclosure provides engineering and cost considerations which could be prohibitive to remediation the site?
- Is it acceptable to employ real-time measuring methodologies for perimeter air monitoring given that such instrumentation is non-specific for VOCs and for the contaminants contained on airborne particulates?
- How should background measurements be considered if they approach or exceed the guidance values for perimeter air monitoring of site emissions?
- How should practical guidance be set when detection limits (especially for real-time measurements) exceed *a priori* guidance levels?
- How, if at all, should visible dust emission guidance be employed (i.e. best management practice including spraying with water or foam)?
- Should dispersion factors be applied to action levels in situations where the receptor is not directly adjacent to the remediation site?
- How should asbestos and PCBs be addressed in perimeter air monitoring guidance (should these sections be eliminated from the guidance and addressed on a site-specific basis)?

As this was not the priority topic for the committee's review, the time allotted to discussion was limited. However, one committee member pointed out that with respect to asbestos monitoring in the residential areas affected by the World Trade Center collapse, the guidance applied to surveys of exposure potential were difficult and site-specific. In this situation, the screening level for wipes was based on a weight-of-evidence approach considering the "experience standard"; background; and precedent.

New Jersey-Specific Biomonitoring Program

Alan Stern of the NJDEP-Office of Science gave a Power Point presentation on the third topic assigned to the committee, the development of a NJ-specific biomonitoring program. This presentation can be found at:

http://www.state.nj.us/dep/sab/minutes/nj-biomonitoring-publichealth.pdf

The purpose of such a program would be:

- To provide information on exposures to toxicants that occur disproportionately to specific groups in NJ that may be defined by their location, age, sex, health status, ethnicity, environmental justice status, etc.
- To monitor changes in exposure over time that can provide information on increases or decreases in risk.
- To assist in designing intervention strategies to protect public health and to monitor the success of such strategies.
- To identify new exposures of concern that would not otherwise be identified on the basis of environmental monitoring or mandated recordkeeping.

Dr. Stern noted that a possible framework for such a program could be adapted from a proposal submitted by NJDEP, NJDHSS and UMDNJ in 2003 to CDC in response a national request for proposals for development of state-based biomonitoring programs. The NJ proposal was highly ranked, although ultimately not accepted for funding. Dr. Stern also pointed out that such a program (or a stand-alone portion of such a program) would require substantial funding that was unlikely to be provided at this time by the State of NJ. The committee was asked, therefore, to consider creative approaches to funding sources.

Next meeting and follow-up

Mark Robson suggested that the next committee meeting should be in March, preferably in person. He suggested that a calendar be sent out to committee members after January to ascertain available meeting dates – ideally in conjunction with the full SAB meeting. He requested that after committee members' review the minutes they self-identify their expertise as appropriate for addressing the acute soil standards issue and share this with the committee.