NIEHS/NTP
VANADIUM PENTOXIDE IRIS COMMENTS
August 1, 2011

Page 6 – When discussing NTP exposures prior to blood collection for vanadium analysis, consider changing to …16 days or 2 years, as blood collection was part of a 16 day study (will provide consistency with toxicity results)

Page 46 – When describing increases in neoplasms for rats exposed to vanadium pentoxide, please note that the historical control databases referenced were different for males and females. For females, a larger database in rats fed NIH-07 diet (which was used prior to NTP-2000 diet) was used as the historical control database. In addition, there was one lung tumor in each of the 1 and 2 mg/m3 groups, compared to 3 at 0.5 mg/m3 and none in controls.

Page 47 – particle size is listed for mouse chronic (and prechronic) studies but not chronic/prechronic rat studies. The particle size is the same for both studies and should be listed as such.

Page 59 – when referring to "short term" inhalation studies in animals, please consider including the duration. In addition, it appears that increases in relative lung weight were observed in the short term NTP inhalation study.

Page 59 – It is unclear why 13-day and 16-day exposures are described. For example, the text indicates that non-neoplastic lesions were observed in the 13-day and 16-day (are these referring to the 16-day and 16-day special study animals?) studies. However, histopathology was not performed on the special study animals, so it is unclear which data are being described. In the last sentence of the last full paragraph, a 3 month study is mentioned and in the next sentence a 13-day study is mentioned. Are these referring to the same study (13-weeks/3-monts vs. 13-days)? Interestingly, on the next page, the 16-day special studies are described. Please clarify.

Page 84- in the second paragraph, it is indicated that exposure caused tumors… in mice, while "some evidence" was used to describe the level of evidence in male mice and female mice were not mentioned. Please consider standardizing the descriptions to either use or omit the NTP levels of evidence and a description of what the levels of evidence were based on (ex. Clear/statistically significant increases; some/increased over historical controls; equivocal/increased only at low dose and over a larger historical control database with a different diet…).

Page 89 – it is unclear what study is being referred relative to neurotoxic effects (the NTP studies were described in the previous sentence).

Page 90 – similar to page 59, it is unclear why decreased lung weights are mentioned. Increased lung weights were observed.

Page 102 – The sentence in the middle of the second full paragraph ("…both sexes at all doses, with 50% of the male mice…") is unclear. Was the intent to indicate that the deaths in males were due to increased tumors?

Page 103 – The sentence "Thus, the increased tumor incidence in rats equivocal overall,…" is incorrect. The male and female rat studies were two separate studies. In males, there was some evidence of carcinogenic activity while in females there was equivocal evidence.

Page 108 – It is unclear why in the DAF equation, body weights are raised to the ¼ and not the ¾ power.

Page 133 – 13 day exposure is mentioned again (see previous comments). In addition, the rat strain is the F344/N.