Reviewer's report

Title: Exposure from the Chernobyl accident had adverse effects on erythrocytes, leukocytes, and, platelets in children in the Narodichesky region, Ukraine. A 6-year follow-up study.

Version: 3 **Date:** 1 April 2008

Reviewer: Rolf Michel

Reviewer's report:

General comments:

The authors presented a revised version of their manuscript. Many of the reviewer's comments were accepted, several not. It will be the editor's decision whether this is acceptable.

Since I am a radioecologist with some statistical experience, I should like to make the remark that evidently radioecologists and epidemiologists speak different languages which lead to misunderstandings. We should not refer to a lack of textbook knowledge since there are textbooks in both fields of science. We rather should try to speak to each other in order to come to a common understanding.

However, as the authors stated about me being biased, I must admit I am biased with respect to a desire for data quality and uncertainties of data. There is frequently the problem that epidemiological investigations do not care too much about the determination of the exposures and about the distribution of doses within an exposed population. This appears hard for a radioecologist to accept.

In the context of uncertainties I have a further remark below:

- Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

I wrote earlier: 23. For all the mean values in the different years and exposure classes I request the authors to give uncertainties for the means. If this does not fit into the figures tables are needed. The authors stated that in the figures this is not practicable. That my easily be the case. But, I request that then tables of the data of Figs. 2 – 4 including the uncertainties should be published in the paper. Data without uncertainties are practically useless.

Further remark:

page 14: I still have a problem with the peculiarity claimed for the Chernobyl exposure. We have ample evidence about wide varieties of types of exposures, including external and internal ones. This includes the global contamination due to the atmospheric weapons test, the exposure of humans close to test sites or in otherwise accidentally or routinely contaminated environments. The composition

of the radionuclides changes from place to place, but we have good information on their pathways to man and the resulting exposures. I agree that the aftermaths of the Chernobyl accident is one of the worst scenarios we had to see, but it does neither change physics nor radioecology.

- Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

page 15, 2nd line: Sr-90 and its daughter are pure beta-emitters. If one wants to consider the internal exposure due to Sr-90 (and eventually Pu isotopes) more detailed radioecological modelling is necessary.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.