

Interactive  
Comment

## ***Interactive comment on “Comment on “Global risk of radioactive fallout after major nuclear reactor accidents” by J. Lelieveld et al. (2012)” by J. Lelieveld et al.***

### **Anonymous Referee #2**

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#### General comments:

The authors post herewith a comment with explanatory questions/answers on their paper, published in ACP No. 12, pp. 4245–4258, this year. Even though the ACP paper got only 10 comments in total, it received quite some attention afterwards, in particular outside the scientific community of atmospheric chemists and physicists. By publishing this comment on their paper, the authors do not contribute to real science with innovative viewpoints but they invite the scientific community to start publicly and scientifically a dialogue on their ACP paper. The questions address more nuclear-related issues, which might be not of the proper interest of the standard ACP reader, but of a more

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nuclear scientific community. Most ACP readers might not have faced the issues nuclear scientists raised. Therefore it might be appropriate to add an introduction giving an insight in the implications of their ACP paper on the nuclear field with the comments received from readers outside the ACP discussions and highlighting the objective of publishing this “comment” in ACPD (acp-2012-493).

Specific comments:

Answer to Q7: The INES scale is defined to inform the public with an IAEA tool or standard that world-wide can be applied and which is agreed by IAEA Parties. The INES scale is defined only after the Chernobyl accident by a regulatory body as IAEA and looked by the perception of outsiders (not involved in the power plant). On the contrary the term “severe accident” was defined by the power plant operators / constructors after the Three-Miles-Island accident and fits within a scale of transients starting from an a transient without shutdown of the reactor to incident with short shutdown of the reactor up to accident with long shutdown of the reactor up to severe accident with core melt (in-vessel or ex-vessel) and closure of the reactor plant. The answer to question 7 should be corrected accordingly.

Answer to Q8: The probability risk assessment (PRA) analyses ways of optimising the safe operation of a nuclear plant. The absolute value is to be taken very carefully and should not be the aim of the study, as it is only assessing accidents we know of. Therefore it is recommended to focus the answer a bit to the justified use of PRA in relative ways to compare reactors at the same site or operations of a reactor, but not to emphasize the absolute value and how to check the absolute value with a perception looking back over the past 70 years operation of reactors world-wide.

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Interactive comment on Atmos. Chem. Phys. Discuss., 12, 19303, 2012.

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