

Practical User Tips for ARCON96

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ABSTRACT

The ARCON96 dispersion model issued by the NRC in May 1997 is a revised version of ARCON95. This software has been widely used to assess design basis dispersion factors (X/Qs) at the control room or technical support center air intakes following an accidental release under the influence of building wakes induced by the reactor block.

A user's guide was published as NUREG/CR-6331, Rev. 1. The model is relatively easy to use, but there are several assumptions and approaches that users need to consider in order to obtain the proper results. In March 2000, a panel discussion for control room habitability analyses was conducted at the NRC headquarters. In that panel, the main topics concentrated on were the methodologies and approaches used for the ARCON96 model. Recommendations were also made for possible improvements to be implemented for the future revision. Subsequently, NRC issued Regulatory Guide 1.194 in 2003 to present the regulatory positions regarding the approaches to be implemented in using the ARCON96 model.

Several approaches adopted by the ARCON96 code, but were not implicitly addressed in the User's Guide, could affect the accuracy of the modeling results. The main purpose of this paper is to discuss essential issues that are not addressed either in ARCON96 User's Guide or in RG 1.194, but have the potential to affect the results. The paper will also address improvements and suggestions that could be added upon to enhance the model performance.