

Deposition Velocity impact on the PNNL Radiochemical Processing Laboratory

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This presentation will discuss the application of DOE's Office of Health, Safety, and Security Safety Bulletin 2011-02, *Accident Analysis Parameter Update* to the Radiochemical Processing Laboratory (RPL) operated by the Pacific Northwest National Laboratory. One unique aspect is that the estimated doses to the Maximally Exposed Offsite Individual (MOI) and the Collocated Worker (CW) currently do not challenge the offsite evaluation guideline or onsite guidelines such that safety class or safety significant controls are required for the MOI and CW. The current accident analysis assumes a bounding inventory and the MOI is located approximately 570 m northeast of the RPL.

In determining the approach to addressing the issues outlined in Safety Bulletin 2011-2, one concern was that applying an overly conservative deposition velocity might drive new controls. Therefore the three different options described in Safety Bulletin 2011-2 were evaluated to determine which approach to apply. Factors such as resources required to execute a specific option and potential impact to the existing accident analysis and resulting control set were considered. A first estimation of potential impact was made by using the default deposition velocity of 0.1 cm/s. Based on that, a final approach was chosen. This presentation will describe the overall results of the analysis and also potential impacts on the Emergency Preparedness Program.