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Spill Modeling of Dilute Water Stream Solutions

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In process industries, the different water solution streams solvent water, stripper overheads, deep well flow and rich water comprise of many hazardous chemicals like hydrogen cyanide, acrolein, acrylonitrile extremely low concentrations. There are also several instances of process water spills during the rou operations. A major challenge is to determine the volatilization of these individual components in case chemical spill in order to comply with the federal regulations of reporting spills as an incident when either c the individual components released with the process water exceeds the reportable quantity.

This work will be broken down into two steps. The first step will involve the benchmarking of all the available spill models. Further the most suitable model will be modified to suit the case of dilute contaminated process streams. The new model will account for all the relevant heat and mass trans mechanisms and will also handle multicomponent spills. Currently there are number of sophisticated mode that can handle pure component or multicomponent spills but the software package handling requires high level of expertise. Moreover the model will also be linked to a user-friendly software application to facilitat the end user in the process industry.