

Response to DNR Data Request No. 1
Maryland Public Service Commission Case No. 9127
UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Question 1-5

For the calculation of PM/PM10/PM2.5 emission from the cooling towers, what particle size distribution data was used? If any test data was obtained from a source other than the Reisman/Frisbie paper referenced on page 6-26 of the Technical Report, please provide the supporting documentation.

RESPONSE

The particle size distributions were estimated using the same methodology described in the Reisman/Frisbie paper. The drift droplet size distributions used were based on cooling tower drift loss curves provided by a potential cooling tower vendor. Drift loss curves were available for a 0.005 percent drift loss rate tower (i.e., for the ESWS towers) and a 0.0005 percent drift loss rate tower. The 0.0005 percent loss curve was used to estimate the droplet distribution for the 0.0004 drift loss rate for the CWS cooling tower. Attached are the two drift loss curves used. Also attached are spreadsheets, one based on each tower's operating design, showing the derivation of the estimated drift droplet size volume fractions that contribute to the emission of PM10 and PM2.5 particles.