

Abstract

Liquid Effluent Dilution Factor

The R E Ginna Nuclear Power Plant is a 584 MWe Westinghouse PWR located on the south shore of Lake Ontario. Gina has a liquid effluent drinking water pathway for offsite dose at the Town of Ontario Water District (OWD) intake 1.3 miles east of Ginna on the Lake Ontario shore. A conservative dilution factor for offsite dose was determined in 1965 from a tracer study and prevailing winds during the study period.

In 2002, OWD upgraded the intake structure with relocation farther from shore in deeper water. Ginna contracted HydroQual to evaluate the change and to update the dilution factor with recent data and current technology. The result was a factor of ten increase in dilution factor under limiting conditions that retain significant conservatism. This change is important in that liquid effluent dose from tritium in the potable water pathway comprises the majority of offsite dose consequence from the operation of Ginna.