

U.S. Nuclear Power Sister Plant Radiological Effluent Release Comparisons

J. T. Harris^{1,3} and D. W. Miller^{2,3}

¹Purdue University, School of Health Sciences, West Lafayette, IN

²University of Illinois at Urbana-Champaign, Department of Nuclear, Plasma, and Radiological Engineering, Urbana, IL

³North American Technical Center, Public Radiation Safety Research Program, Urbana, IL 61801

The North American Technical Center (NATC) has developed and continues to maintain the official U.S. effluent database for gaseous and liquid releases from U.S. nuclear power stations as part of its Public Radiation Safety Research Program. Components of this program include trend analyses, international comparisons, expert group meetings and web-based electronic database development. All of these research activities continue to receive support and interest from government, industry, and scientific organizations.

The commercial nuclear power industry has long used benchmarking studies and comparisons to promote excellence in plant work management and operation practices. Because of the recent reduction in RETS-REMP programs at many nuclear power plants due to cost-reduction initiatives, organizations such as ANI and the U.S. NRC have expressed concern of a potentially serious incident. One method to compare radiological releases is by ranking nuclear power plants based on reactor type. Performance ranks are very important to the industry and poor performance often leads to increased scrutiny. Because of this, a plant will usually attempt to make improvements in its rank by changing management or operation practices. A simple method of ranking nuclear reactor radiological category releases is by plant design. Specifically, the categories are broken down by sister plants.

This paper addresses one of the Public Radiation Safety Research Program's key components involved with radiological effluents: sister plant comparisons. An explanation of groupings and rankings will be made and results will be discussed for the time period from 1994-2002.