latory Commission to the ANS Environmental and Siting Consensus Committee chair including, but not limited to, recognizing that this standard does not apply to natural draft cooling towers that are not seismically qualified for UHS or to the passive cooling systems of newer reactor designs. Potential impacts from climate change are addressed, and critical time periods are acknowledged to be dependent on various system designs. ANSI/ANS-2.21-2022 establishes criteria for the use of meteorological data that are both validated and representative of a nuclear facility, and the standard identifies supporting hydrological information to evaluate effects on UHS performance due to atmospheric conditions. Meteorological input parameters may include dry-bulb temperature, wet-bulb temperature, dewpoint, cloud cover, relative humidity, precipitation, wind speed and direction, incoming shortwave solar radiation, incoming longwave radiation, surface water temperature, and station atmospheric pressure.

The ANS-2.21 Working Group has incorporated risk-informed, performance-based (RIPB) recommendations into the standard. The recommendations are restricted to the assessment of the probability of peak return-water temperatures or 30-day water losses, rather than a single deterministic result that maximizes the most adverse outcome. The RIPB concepts apply to the analytical approaches used to evaluate UHS performance but not to the meteorological data input to such analyses. Nuclear power plant operators, design professionals, nuclear facility owners, and nuclear vendors/consultants will benefit from an awareness of the inherent limitations of meteorological data collection, as well as potential data resources described in this revision. Examples of applying deterministic and RIPB approaches to developing input data for UHS performance modeling are provided in Appendix A of the standard. Appendix B provides examples of adjusting data for representativeness and gap filling. Appendix C provides a listing of additional online resources for meteorological data that will evolve with advances in monitoring technology.

Check out a preview or purchase ANSI/ANS-2.21-2022 in the ANS Standards Store at techstreet.com/ANS.