

ANS STANDARDS TO SUPPORT DOE NPH DESIGN

Carl Mazzola, CB & I Federal Services

The American Nuclear Society (ANS) has been developing Voluntary Consensus Standards (VCSs) for more than 50 years and consistently meets the 1995 National Technology Transfer and Advancement Act objectives saving the Federal Government millions of dollars of standards development costs annually. The ANS Standards Committee has 8 consensus committees, one of which is the Environmental & Siting Consensus Committee (ESCC) which is responsible for preparation and maintenance of VCSs for all aspects of nuclear power plant and non-reactor nuclear facility siting, environmental assessment, environmental management, environmental monitoring, and categorization and evaluation of natural phenomena hazards (NPHs) at these public and private sector nuclear facilities.

ESCC develops and maintains many multi-media environmental and siting standards to assist the private and public sectors in nuclear facility licensing, design and construction, and develops and maintains several risk-informed NPH standards to support the Department of Energy (DOE) NPH Handbook, DOE-STD-1020-2012 and DOE-STD-1189-2008. ESCC standards include risk-informed NPH determinations to ensure design adequacy and address earthquakes, extreme straight-line winds, hurricanes, tornadoes, floods, tsunamis, seiches, storm surges, and extreme precipitation.

Earthquake standards include:

- ANS-2.2 - Earthquake Instrumentation Criteria for Nuclear Power Plants;
- ANS-2.10 - Criteria for the Handling and Initial Evaluation of Records from Nuclear Power Plant Seismic Instrumentation;
- ANS-2.23 - Nuclear Plant Response to an Earthquake;
- ANS-2.26 - Categorization of Nuclear Facility Structures, Systems, and Components for Seismic Design;
- ANS-2.27 - Criteria for Investigations of Nuclear Facility Sites for Seismic Hazard Assessments;
- ANS-2.29 - Probabilistic Seismic Hazard Analysis; and,
- ANS-2.30 - Assessing Capability for Surface Faulting at Nuclear Facilities.

ANS-2.3 - Standard for Estimating Tornado, Hurricane and Extreme Straight-Line Wind Characteristics at Nuclear Facility Sites assists in the determination of extreme winds, while ANS-2.8 – Determination of External Flood Hazards for Nuclear Facilities addresses the many initiators associated with flooding.

A crosswalk of ANS standards associated with DOE-STD-1020-2012 and the NPH Handbook will be presented along with a status on the reaffirmation and revision of these standards in order to maintain them as state-of-the science.