

APPENDIX B. REFERENCES

American National Standards Institute (ANSI), American Nuclear Society (ANS)

ANSI N14.6-1993, "Radioactive Materials—Special Lifting Devices for Shipping Containers Weighing 10000 Pounds (4500 kg) or More," American National Standards Institute, 1993.

ANSI N42.18-2004, "Specification and Performance of On-Site Instrumentation for Continuously Monitoring Radioactivity in Effluents," American National Standards Institute, 2004.

ANSI/ANS-3.2-2012, "Managerial, Administrative, and Quality Assurance Controls for the Operational Phase of Nuclear Power Plants," American National Standards Institute/American Nuclear Society, 2012.

ANSI/ANS-3.5-2009, "Nuclear Power Plant Simulators for Use in Operator Training and Examination," 2009.

ANSI/ANS-5.1-2014, "Decay Heat Power in Light Water Reactors," American National Standards Institute/American Nuclear Society, 2014.

ANSI/ANS-6.4-2006, "Nuclear Analysis and Design of Concrete Radiation Shielding for Nuclear Power Plants," American National Standards Institute/American Nuclear Society, 2006.

ANSI/ANS-18.1-1999, "Radioactive Source Term for Normal Operation of Light Water Reactors," American National Standards Institute/American Nuclear Society, 1999.

ANSI/ANS-40.37-2009, "Mobile Low-Level Radioactive Waste Processing Systems," American National Standards Institute/American Nuclear Society, 2009.

ANSI/ANS-55.1-1992, "Solid Radioactive Waste Processing System for Light-Water-Cooled Reactor Plants," American National Standards Institute/American Nuclear Society, 1992.

ANSI/ANS-55.4-1993, "Gaseous Radioactive Waste Processing Systems for Light Water Reactor Plants," American National Standards Institute/American Nuclear Society, 1993.

ANSI/ANS-57.1-1992, "Design Requirements for Light Water Reactor Fuel Handling Systems," American National Standards Institute/American Nuclear Society, 1992.

ANSI/ANS-57.2-1983, "Design Requirements for Light Water Reactor Spent Fuel Storage Facilities at Nuclear Power Plants," American National Standards Institute/American Nuclear Society, 1983.

ANSI/ANS-57.3-1983, "Design Requirements for New Fuel Storage Facilities at Light Water Reactor Plants," American National Standards Institute/American Nuclear Society, 1983.

ANSI/ANS/HPSSC-6.8.1-1981, "Location and Design Criteria for Area Radiation Monitoring Systems for Light Water Nuclear Reactors," American National Standards Institute/American Nuclear Society, 1981.

ANSI/HPS-N13.1-2011, "Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities," American National Standards Institute/Health Physics Society, 2011.

ANSI/ISA-67.02.01-1999, "Nuclear Safety-Related Instrument-Sensing Line Piping and Tubing Standard for Use in Nuclear Power Plants," American National Standards Institute/Instrument Society of America, 1999.

ANSI/ISA-S7.3-1976, Reaffirmed 1981, "Quality Standard for Instrument Air," American National Standards Institute/Instrument Society of America, 1981.

ANS "Decay Energy Release Rates Following Shutdown of Uranium-Fueled Thermal Reactors," approved by Subcommittee ANS-5, ANS Standards Committee, American Nuclear Society, October 1971.

American Society of Mechanical Engineers (ASME)

ASME AG-1, "Code on Nuclear Air and Gas Treatment," American Society of Mechanical Engineers, 2015.

ASME/ANS RA-Sa-2009, "Addenda to ASME/ANS RA-S-2008," American Society of Mechanical Engineers/American Nuclear Society, 2009.

ASME B30.2-2005, "Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)," American Society of Mechanical Engineers, 2005.

ASME B30.9-2014, "Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings," American Society of Mechanical Engineers, 2014.

ASME B31.1 (Power Piping), "ASME Code for Pressure Piping," American Society of Mechanical Engineers.

ASME Boiler and Pressure Vessel Code, Section III, Division I, Subsection NF, "Class 1, 2, 3, and MC Supports," 2007 Edition.

ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, "Rules for Construction of Pressure Vessels," American Society of Mechanical Engineers, 2013 Edition.

ASME Code Case N-60-5, "Material for Core Support Structures, Section III, Division 1," American Society of Mechanical Engineers, February 1994.

ASME Code Case N-62-7, "Internal and External Valve Items, Section III, Division 1, Classes 1, 2, and 3," American Society of Mechanical Engineers, February 2003.

ASME Code Case N-759-2, "Alternative Rules for Determining Allowable External Pressure and Compressive Stresses for Cylinders, Cones, Spheres, and Formed Heads, Class 1, 2, and 3, Section III, Division 1," American Society of Mechanical Engineers, January 2008.

ASME Boiler and Pressure Vessel Code, Section III, Subarticle NB-2300, "Fracture Toughness Requirements for Materials," American Society of Mechanical Engineers.

ASME Code, Section III, Subsection NB, "Class 1 Components," American Society of Mechanical Engineers.

ASME Code, Section III, Table NB 4622.1-1, "Mandatory Requirements for Postweld Heat Treatment of Welds," American Society of Mechanical Engineers.

ASME Code, Section XI, Appendix G, "Fracture Toughness Criteria for Protection Against Failure," American Society of Mechanical Engineers.

ASME Code, Section XI, Division 1, "Rules for Inservice Inspection of Nuclear Power Plant Components," American Society of Mechanical Engineers.

ASME N509-2002, "Nuclear Power Plant Air-Cleaning Units and Components," American Society of Mechanical Engineers.

ASME N510-2007, "Testing of Nuclear Air Treatment Systems," American Society of Mechanical Engineers.

ASME NOG-1-2004, "Rules for Construction of Overhead and Gantry Cranes (Top Running Bridge, Multiple Girder)," American Society of Mechanical Engineers, 2004.

ASME NQA-1-2008, "Quality Assurance Requirements for Nuclear Facility Applications," American Society of Mechanical Engineers, 2008.

ASME NQA-1a-2009, "Addenda A to Quality Assurance Requirements for Nuclear Facility Applications," American Society of Mechanical Engineers, 2009.

ASME NUM-1-2009, "Rules for Construction of Cranes, Monorails, and Hoists (With Bridge or Trolley or Hoist of the Underhung Type)," American Society of Mechanical Engineers, 2009.

ASME NUM-1-2016, "Rules for Construction of Cranes, Monorails, and Hoists (With Bridge or Trolley or Hoist of the Underhung Type)," American Society of Mechanical Engineers, 2016.

ASME OM-S/G-2000, "Standards and Guides for Operation of Nuclear Power Plants," American Society of Mechanical Engineers, 2000.

ASME QME-1-2007, "Qualification of Active Mechanical Equipment Used in Nuclear Power Plants," Appendix QR-B, American Society of Mechanical Engineers, 2007.

ASME STS-1-2011, "Steel Stacks," American Society of Mechanical Engineers, 2011.

ASTM International (Formerly American Society for Testing Materials)

ASTM A262-15, "Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels," ASTM International, 2015.

ASTM C1187-2007, "Standard Guide for Establishing Surveillance Test Program for Boron-Based Neutron Absorbing Material Systems for Use in Nuclear Spent Fuel Storage Racks," ASTM International, 2007.

ASTM E-119, "Standard Test Methods for Fire Tests of Building Construction and Materials," ASTM International.

ASTM E185-82, "Standard Practice for Conducting Surveillance Tests for Light-Water Cooled Nuclear Power Reactor Vessels," ASTM International, 1982.

ASTM E-814, "Standard Test Method for Fire Tests of Through-Penetration Fire Stops," ASTM International.

Electric Power Research Institute (EPRI)

EPRI, "Advanced Light Water Reactor Utility Requirements Document (URD), "Volume II, "ALWR Evolutionary Plant," Chapter 1, "Overall Requirements", Revision 8, Electric Power Research Institute, December 2014.

EPRI NP-6559, "Voice Communication Systems Compatible with Respiratory Protection," Electric Power Research Institute, November 1989.

EPRI NSAC-202L-R3, "Recommendations for an Effective Flow-Accelerated Corrosion Program," Revision 3, 2007, Electric Power Research Institute.

EPRI Report Series, "PWR Secondary Water Chemistry Guidelines" (EPRI Guidelines), Revision 7, 2009, Electric Power Research Institute.

EPRI Technical Report (TR)-1008102, "PWR Axial Offset Anomaly (AOA) Guidelines," Revision 1, June 2004, Electric Power Research Institute.

EPRI TR-1009903, "EPRI Tritium Management Model," Electric Power Research Institute, 2005.

EPRI TR-1011106, "Proceedings of the June 2004 EPRI PWR Primary Shutdown Workshop," 2004, Electric Power Research Institute.

EPRI TR-1011955, Materials Reliability Program (MRP) 146, "Materials Reliability Program: Management of Thermal Fatigue in Normally Stagnant Non-Isolable Reactor Coolant System Branch Lines," Revision 1, Electric Power Research Institute, June 2011.

EPRI Report 1014986, "Primary Water Chemistry Guidelines," Appendix B, Section B.7, "Spent Fuel Pool Cooling and Cleanup System," Electric Power Research Institute.

EPRI TR-1015119, "Application of the EPRI Standard Radiation Monitoring Program for PWR Radiation Field Reduction Final Report," Electric Power Research Institute, November 2007.

EPRI TR-104788 R2, "PWR Primary-to-Secondary Leak Guidelines—Revision 2," Electric Power Research Institute, February 2000.

EPRI TR-104862, "Area and Process Radiation Monitoring System Guide," Revision 2, Electric Power Research Institute, 2003.

EPRI TR-3002000505, "Pressurized Water Reactor Primary Water Chemistry Guidelines," Revision 7 (EPRI Guidelines), Electric Power Research Institute, April 2014.

EPRI VIPRE-01, "Versatile Internals and Component Program for Reactors," Electrical Power Research Institute.

Institute of Electrical and Electronics Engineers (IEEE)

IEEE Std. 7-4.3.2-2003, "IEEE Standard Criteria for Digital Computers in Safety Systems of Nuclear Power Generating Stations," Institute of Electrical and Electronics Engineers, 2003.

IEEE Std. 308-2001, "IEEE Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations," Institute of Electrical and Electronics Engineers, 2001.

IEEE Std. 323-2003, "IEEE Standards for Qualifying Class 1E Equipment for Nuclear Power Generating Stations," Institute of Electrical and Electronics Engineers, 2003.

IEEE Std. 352-1998, "IEEE Guide for General Principles of Reliability Analysis of Nuclear Power Generating Station Safety Systems," Institute of Electrical and Electronics Engineers, 1998.

IEEE Std. 379-2000, "Application of the Single-Failure Criterion to Nuclear Power Generating Station Safety Systems," Institute of Electrical and Electronics Engineers, 2000.

IEEE Std. 383-2003, "Qualifying Class 1E Electric Cables and Field Splices for Nuclear Power Generating Stations," Institute of Electrical and Electronics Engineers, 2003.

IEEE Std. 384-1992, "Standard Criteria for Independence of Class 1E Equipment and Circuits," Institute of Electrical and Electronics Engineers, 1992.

IEEE Std. 497-2002, "IEEE Standard Criteria for Accident Monitoring Instrumentation for Nuclear Power Generating Stations," Revision 4, Institute of Electrical and Electronics Engineers, 2002.

IEEE Std. 603-1991, "Criteria for Safety Systems for Nuclear Power Generating Stations," Institute of Electrical and Electronics Engineers, 1991.

IEEE Std. 634, "IEEE Standard Cable Penetration Fire Stop Qualification Test," Institute of Electrical and Electronics Engineers, 2005.

IEEE Std. 665-1995, "IEEE Guide for Generating Station Grounding," Institute of Electrical and Electronics Engineers, 1995.

IEEE Std. 666-2007, "IEEE Design Guide for Electric Power Service Systems for Generating Stations," Institute of Electrical and Electronics Engineers, 2007.

IEEE Std. 828-2005, "IEEE Standard for Software Configuration Management Plans," Institute of Electrical and Electronics Engineers, 2005.

IEEE Std. 829-2008, "IEEE Standard for Software Test Documentation," Institute of Electrical and Electronics Engineers, 2008.

IEEE Std. 830-1998, "IEEE Recommended Practice for Software Requirements Specifications," Institute of Electrical and Electronics Engineers, 1998.

IEEE Std. 1008-1987, "IEEE Standard for Software Unit Testing," Institute of Electrical and Electronics Engineers, 1987.

IEEE Std. 1012-2004, "IEEE Standard for Software Verification and Validation," Institute of Electrical and Electronics Engineers, 2004.

IEEE Std. 1028-2008, "IEEE Standard for Software Reviews and Audits," Institute of Electrical and Electronics Engineers, 2008.

IEEE Std. 1050-2004, "IEEE Guide for Instrumentation and Control Equipment Grounding in Generating Stations," Institute of Electrical and Electronics Engineers, 2004.

IEEE Std. 1074-2006, "IEEE Standard for Developing a Software Project Life Cycle Process," Institute of Electrical and Electronics Engineers, 2006.

IEEE Std. 1187-2013, "IEEE Recommended Practice for Installation Design and Installation of Valve-Regulated Lead-Acid Batteries for Stationary Applications," Institute of Electrical and Electronics Engineers, 2013.

IEEE Std. 1202-2006, "IEEE Standard for Flame-Propagation Testing of Wire and Cable," Institute of Electrical and Electronics Engineers, 2006.

IEEE Std. C62.23-1995, "IEEE Application Guide for Surge Protection of Electric Generating Plants," Institute of Electrical and Electronics Engineers, 1995.

Nuclear Energy Institute (NEI)

NEI 97-06, "Steam Generator Program Guidelines," Revision 3, January 2011, Nuclear Energy Institute. (ADAMS Accession No. ML111310708).

NEI 00-01, "Guidance for Post-Fire Safe Shutdown Circuit Analysis," Revision 2, May 2009, Nuclear Energy Institute. (ADAMS Accession No. ML091770265).

NEI 04-07, Volume 1, "Pressurized Water Reactor Sump Performance Evaluation Methodology," Revision 0, December 2004, Nuclear Energy Institute. (ADAMS Accession No. ML050550138).

NEI 04-07, Volume 2, "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to NRC Generic Letter 2004-02," Revision 0, December 2004, Nuclear Energy Institute. (ADAMS Accession No. ML050550156).

NEI 04-08, "Risk-Informed Technical Specifications Initiative 7a, Allowance for Non-Technical Specification Barrier Degradation on Supported System Operability," March 2006, Nuclear Energy Institute. (ADAMS Accession No. ML061220426).

NEI 04-10, "Risk-Informed Technical Specifications Initiative 5b—Risk-Informed Method for Control of Surveillance Frequencies," Revision 1, April 2007, Nuclear Energy Institute. (ADAMS Accession No. ML071360456).

NEI 07-03A, "Generic FSAR Template Guidance for Radiation Protection Program Description," and the associated NRC SER, Revision 0, May 2009, Nuclear Energy Institute. (ADAMS Accession No. ML091490684).

NEI 07-08A, "Generic FSAR Template Guidance for Ensuring that Occupational Radiation Exposures Are As Low As Is Reasonably Achievable (ALARA)," and the associated NRC SER, Revision 0, October 2009, Nuclear Energy Institute. (ADAMS Accession No. ML093220178),

NEI 07-09A, "Generic FSAR Template Guidance for Offsite Dose Calculation Manual (ODCM) Program Description," Revision 0, March 2009, Nuclear Energy Institute. (ADAMS Accession No. ML091050234).

NEI 07-10A, "Generic FSAR Template Guidance for Process Control Program," Revision 0, March 2009, Nuclear Energy Institute. (ADAMS Accession No. ML091460627).

NEI 08-08, "Generic FSAR Template Guidance for Life Cycle Minimization of Contamination," Revision 3, September 2009, Nuclear Energy Institute. (ADAMS Accession No. ML092890146).

NEI 08-08A, "Generic FSAR Template Guidance for Life Cycle Minimization of Contamination," Revision 0, October 2009, and the associated NRC SER. Nuclear Energy Institute. (ADAMS Accession No. ML093220530).

NEI 09-09, "Nuclear Power Plant-Referenced Simulator Scenario Based Testing Methodology," Revision 1, December 2009, Nuclear Energy Institute. (ADAMS Accession No. ML093521659).

NEI 16-03-A, "Guidance for Monitoring of Fixed Neutron Absorbers in Spent Fuel Pools," Revision 0, May 2017, Nuclear Energy Institute. (ADAMS Accession No. ML17263A133).

NuScale Power, LLC (NuScale)

NuScale Topical Reports

NuScale Power LLC, Licensing Topical Report TR-0116-20825-NP-A, "Applicability of AREVA Fuel Methodology for the NuScale Design," Revision 1, February 2018 (ADAMS Accession No. ML18040B306).

NuScale Power LLC, Licensing Topical Report TR-0116-21012-NP-A, "NuScale Power Critical Heat Flux Correlations," Revision 1, December 2018 (ADAMS Accession No. ML18360A632).

NuScale Power LLC, Licensing Topical Report TR-0515-13952-NP-A, "Risk Significance Determination," Revision 0, October 2016 (ADAMS Accession No. ML16284A016).

NuScale Power LLC, Licensing Topical Report TR-0516-49416-NP-A, "Non-Loss-of-Coolant Accident Analysis Methodology," Revision 3, July 2020 (ADAMS Accession No. ML20191A281).

NuScale Power LLC, Licensing Topical Report TR-0516-49417-NP-A, "Evaluation Methodology for Stability Analysis of the NuScale Power Module," Revision 1, March 2020 (ADAMS Accession No. ML20078Q094).

NuScale Power LLC, Licensing Topical Report TR-0516-49422-NP-A, "Loss-of-Coolant Accident Evaluation Model," Revision 2, July 2020 (ADAMS Accession No. ML20189A644).

NuScale Power LLC, Licensing Topical Report TR-0616-48793-NP-A, "Nuclear Analysis Codes and Methods Qualification," Revision 1, December 2018 (ADAMS Accession No. ML18348B036)

NuScale Power LLC, Licensing Topical Report TR-0716-50351-NP-A, "NuScale Applicability of AREVA Method for the Evaluation of Fuel Assembly Structural Response to Externally Applied Forces," Revision 1, May 2020 (ADAMS Accession No. ML20122A248).

NuScale Power LLC, Licensing Topical Report TR-0716-50350-NP-A, "Rod Ejection Accident Methodology," Revision 1, June 2020 (ADAMS Accession No. ML20168B203).

NuScale Power LLC, Licensing Topical Report TR-0815-16497-NP-A, "Safety Classification of Passive Nuclear Power Plant Electrical Systems," Revision 1, February 2018 (ADAMS Accession No. ML18054B607).

NuScale Power LLC, Licensing Topical Report TR-0915-17564-NP-A, "Subchannel Analysis Methodology," Revision 2, March 2019 (ADAMS Accession No. ML19067A256).

NuScale Power LLC, Licensing Topical Report TR-0915-17565-NP-A, "Accident Source Term Methodology," Revision 4, February 2020 (ADAMS Accession No. ML20057G132).

NuScale Power LLC, Licensing Topical Report TR-1010-859-NP-A, "NuScale Topical Report: Quality Assurance Program Description for the NuScale Power Plant," Revision 5, June 2020 (ADAMS Accession No. ML20176A494).

NuScale Power LLC, Licensing Topical Report TR-1015-18653-NP-A, "Design of the Highly Integrated Protection System Platform Topical Report," Revision 2, September 2017 (ADAMS Accession No. ML17256A892).

NuScale Technical Reports

NuScale Power LLC, Licensing Technical Report ES-0304-1381-NP, "Human-System Interface Style Guide," Revision 4, December 2019 (ADAMS Accession No. ML19338E948).

NuScale Power LLC, Licensing Technical Report RP-0215-10815-NP, "Concept of Operations," Revision 3, May 2019 (ADAMS Accession No. ML19133A293).

NuScale Power LLC, Licensing Technical Report RP-0316-17614-NP, "Human Factors Engineering Operating Experience Review Results Summary Report," Revision 0, December 2016 (ADAMS Accession No. ML16364A342).

NuScale Power LLC, Licensing Technical Report RP-0316-17615-NP, "Human Factors Engineering Functional Requirements Analysis and Function Allocation Results Summary Report," Revision 0, December 2016 (ADAMS Accession No. ML16364A342).

NuScale Power LLC, Licensing Technical Report RP-0316-17616-NP, "Human Factors Engineering Task Analysis Results Summary Report," Revision 2, April 2019 (ADAMS Accession No. ML19119A393).

NuScale Power LLC, Licensing Technical Report RP-0316-17617-NP, "Human Factors Engineering Staffing and Qualifications Results Summary Report," Revision 0, December 2016 (ADAMS Accession No. ML17004A222).

NuScale Power LLC, Licensing Technical Report RP-0316-17618-NP, "Human Factors Engineering Treatment of Important Human Actions Results Summary Report," Revision 0, December 2016 (ADAMS Accession No. ML17004A222).

NuScale Power LLC, Licensing Technical Report RP-0316-17619-NP, "Human Factors Engineering Human-System Interface Design Results Summary Report," Revision 2, April 2019 (ADAMS Accession No. ML19119A398).

NuScale Power LLC, Licensing Technical Report RP-0516-49116-NP, "Control Room Staffing Plan Validation Results," Revision 1, December 2016 (ADAMS Accession No. ML16364A356).

NuScale Power LLC, Licensing Technical Report RP-0914-8534-NP, "Human Factors Engineering Program Management Plan," Revision 5, April 2019 (ADAMS Accession No. ML19119A342).

NuScale Power LLC, Licensing Technical Report RP-0914-8543-NP, "Human Factors Verification and Validation Implementation Plan," Revision 5, April 2019 (ADAMS Accession No. ML19119A372).

NuScale Power LLC, Licensing Technical Report RP-0914-8544-NP, "Human Factors Engineering Design Implementation Implementation Plan," Revision 4, November 2019 (ADAMS Accession No. ML19331A910).

NuScale Power LLC, Licensing Technical Report RP-1018-61289-NP, "Human Factors Engineering Verification and Validation Results Summary Report," Revision 1, July 2019 (ADAMS Accession No. ML19212A773).

NuScale Power LLC, Licensing Technical Report RP-1215-20253-NP, "Control Room Staffing Plan Validation Methodology," Revision 3, December 2016 (ADAMS Accession No. ML16364A353).

NuScale Power LLC, Licensing Technical Report TR-0116-20781-NP, "Fluence Calculation Methodology and Results," Revision 1, July 2019 (ADAMS Accession No. ML19183A485).

NuScale Power LLC, Licensing Technical Report TR-0316-22048-NP, "Nuclear Steam Supply System Advanced Sensor Technical Report," Revision 3, May 2020 (ADAMS Accession No. ML20141M764).

NuScale Power LLC, Licensing Technical Report TR-0516-49084-NP, "Containment Response Analysis Methodology Technical Report," Revision 3, May 2020 (ADAMS Accession No. ML20141L808).

NuScale Power LLC, Licensing Technical Report TR-0616-49121-NP, "NuScale Instrument Setpoint Methodology Technical Report," Revision 3, May 2020 (ADAMS Accession No. ML20141M114).

NuScale Power LLC, Licensing Technical Report TR-0716-50424-NP, "Combustible Gas Control," Revision 1, March 2019 (ADAMS Accession No. ML19091A232).

NuScale Power LLC, Licensing Technical Report TR-0716-50439-NP, "NuScale Comprehensive Vibration Assessment Program Analysis Technical Report," Revision 2, July 2019 (ADAMS Accession No. ML19212A776).

NuScale Power LLC, Licensing Technical Report TR-0816-49833-NP, "Fuel Storage Rack Analysis," Revision 1, November 2018 (ADAMS Accession No. ML18310A154).

NuScale Power LLC, Licensing Technical Report TR-0816-50796-NP, "Loss of Large Areas Due to Explosions and Fires Assessment," Revision 1, June 2019 (ADAMS Accession No. ML19165A294).

NuScale Power LLC, Licensing Technical Report TR-0816-50797 (NuScale nonproprietary), "Mitigation Strategies for Loss of All AC Power Event," Revision 3, October 2019 (ADAMS Accession No. ML19302H598).

NuScale Power LLC, Licensing Technical Report TR-0816-51127-NP, "NuFuel-HTP2™ Fuel and Control Rod Assembly Designs," Revision 3, December 2019 (ADAMS Accession No. ML19353A719).

NuScale Power LLC, Licensing Technical Report TR-0818-61384-NP, "Pipe Rupture Hazards Analysis," Revision 2, July 2019 (ADAMS Accession No. ML19212A682).

NuScale Power LLC, Licensing Technical Report TR-0916-51299-NP, "Long-Term Cooling Methodology," Revision 3, May 2020 (ADAMS Accession No. ML20141L816).

NuScale Power LLC, Licensing Technical Report TR-0916-51502-NP, "NuScale Power Module Seismic Analysis," Revision 2, April 2019 (ADAMS Accession No. ML19093B850).

NuScale Power LLC, Licensing Technical Report TR-0917-56119-NP, "CNV Ultimate Pressure Integrity," Revision 1, June 2019 (ADAMS Accession No. ML19158A382).

NuScale Power LLC, Licensing Technical Report TR-0918-60894-NP, "Comprehensive Vibration Assessment Program Measurement and Inspection Plan Technical Report," Revision 1, August 2019 (ADAMS Accession No. ML19214A248).

NuScale Power LLC, Licensing Technical Report TR-1015-18177-NP, "Pressure and Temperature Limits Methodology," Revision 2, October 2018 (ADAMS Accession No. ML18298A304).

NuScale Power LLC, Licensing Technical Report TR-1016-51669-NP, "NuScale Power Module Short-Term Transient Analysis," Revision 1, July 2019 (ADAMS Accession No. ML19211D411).

NuScale Power LLC, Licensing Technical Report TR-1116-51962-NP, "NuScale Containment Leakage Integrity Assurance Technical Report," Revision 1, May 2019 (ADAMS Accession No. ML19149A298).

NuScale Power LLC, Licensing Technical Report TR-1116-52065-NP, “Effluent Release (GALE Replacement) Methodology and Results,” Revision 1, November 2018 (ADAMS Accession No. ML18317A364).

Other NuScale Documents

NuScale Power, LLC, TR-1116-52011, “Technical Specifications Regulatory Conformance and Development,” Revision 4, May 2020 (ADAMS Accession No. ML20141L804).

NuScale Power, LLC, NuScale Reactor Excursion and Leak Analysis Program, Version 5 (NRELAP5).

NP-RP-0612-023, “Gap Analysis Summary Report,” Revision 1, July 2014 (ADAMS Accession No. ML14212A832).

U.S. Nuclear Regulatory Commission (NRC)

Commission Papers—Secretary of the Commission (SECY)

SECY-77-439, “Single Failure Criterion,” August 1977 (ADAMS Accession No. ML060260236).

SECY-83-293, “Amendments to 10 CFR 50 Related to Anticipated Transients Without Scram (ATWS) Events,” July 1983.

SECY-90-016, “Evolutionary Light Water Reactor (LWR) Certification Issues and Their Relationship to Current Regulatory Requirements,” January 1990 (ADAMS Accession No. ML003707849), and associated Staff Requirements Memorandum, June 1990 (ADAMS Accession No. ML003707885).

SECY-90-377, “Requirements for Design Certification under 10 CFR Part 52,” November 1990 (ADAMS Accession No. ML003707889), and associated Staff Requirements Memorandum, February 1991 (ADAMS Accession No. ML003707892)

SECY-91-078, “Chapter 11 of the Electric Power Research Institute’s (EPRI’s) Requirements Document and Additional Evolutionary Light Water Reactor (LWR) Certification Issues,” March 1991 (ADAMS Accession No. ML072150592).

SECY-93-087, “Policy, Technical, and Licensing Issues Pertaining to Evolutionary and Advanced Light-Water Reactor (ALWR) Designs,” April 1993 (ADAMS Accession No. ML003708021), and associated Staff Requirements Memorandum, July 1993 (ADAMS Accession No. ML003708056).

SECY-93-323, “Withdrawal of Proposed Rulemaking To Establish Procedures and Criteria for On-Site Storage of Low-Level Radioactive Waste after January 1, 1996,” November 1993 (ADAMS Accession No. ML080720113).

SECY-94-084, “Policy and Technical Issues Associated with the Regulatory Treatment of Non-Safety Systems in Passive Plant Designs,” March 1994 (ADAMS Accession No. ML003708068), and associated Staff Requirements Memorandum, June 1994 (ADAMS Accession No. ML003708098).

SECY-94-198, "Review of Existing Guidance Concerning the Extended Storage of Low-Level Radioactive Waste," August 1994 (ADAMS Accession No. ML071640462).

SECY-95-132, "Policy and Technical Issues Associated with the Regulatory Treatment of Non-Safety Systems (RTNSS) in Passive Plant Designs," May 1995 (ADAMS Accession No. ML003708005), and associated Staff Requirements Memorandum, June 1995 (ADAMS Accession No. ML003708019).

SRM-SECY-98-144, "White Paper on Risk-Informed and Performance-Based Regulation," March 1999 (ADAMS Accession No. ML003753601).

SECY-02-0067, "Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) for Operational Programs (Programmatic ITAAC)," April 2002 (ADAMS Accession No. ML020700641), and associated Staff Requirements Memorandum, September 2002 (ADAMS Accession No. ML022540755).

SECY-04-0032, "Programmatic Information Needed for Approval of a Combined License without Inspections, Tests, Analyses, and Acceptance Criteria," February 2004 (ADAMS Accession No. ML040230079), and associated Staff Requirements Memorandum, May 2004 (ADAMS Accession No. ML041350440).

SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," October 2005 (ADAMS Accession No. ML052770257), and associated Staff Requirements Memorandum, February 2006 (ADAMS Accession No. ML060530316).

SECY-07-0110, "Summary of Activities Related to Generic Issues Program," July 2007 (ADAMS Accession No. ML071620064).

SECY-11-0024, "Use of Risk Insights To Enhance the Safety Focus of Small Modular Reactor Reviews," February 2011 (ADAMS Accession No. ML110110691).

SECY-16-0012, "Accident Source Terms and Siting for Small Modular Reactors and Non-Light Water Reactors," February 2016 (ADAMS Accession No. ML15309A319).

SECY-18-0099, "NuScale Power Exemption Request from 10 CFR Part 50, Appendix A, General Design Criterion 27, 'Combined Reactivity Control Systems Capability,'" October 2018 (ADAMS Accession No. ML18065A540).

SECY-19-0036, "Application of the Single Failure Criterion to NuScale Power LLC's Inadvertent Actuation Block Valves," April 2019 (ADAMS Accession No. ML19060A081), and the associated Staff Requirements Memorandum, July 2019 (ADAMS Accession No. ML19183A408).

SECY-19-0047, "Containment Performance Goals for the NuScale Small Modular Reactor Design," May 2019 (ADAMS Accession No. ML19106A392).

SECY-19-0066, "Staff Review of NuScale Power's Mitigation Strategy for Beyond-Design-Basis External Events," June 2019 (ADAMS Accession No. ML19148A443).

NUREG Series Reports

NUREG-0017, "Calculation of Releases of Radioactive Materials in Gaseous and Liquid Effluents from Pressurized Water Reactors: PWR-GALE Code," Revision 1, April 1985 (ADAMS Accession No. ML112720411).

NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants: A Guidance Manual for Users of Standard Technical Specifications," October 1978 (ADAMS Accession No. ML091050057).

NUREG-0138, "Staff Discussion of Fifteen Technical Issues Listed in Attachment to November 3, 1976 Memorandum from Director, NRR to NRR Staff," November 1976 (ADAMS Accession No. ML13267A423).

NUREG-0554, "Single-Failure-Proof Cranes for Nuclear Power Plants," May 1979 (ADAMS Accession No. ML110450636).

NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations," July 1979 (ADAMS Accession No. ML090060030).

NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment," Revision 1, July 1981 (ADAMS Accession No. ML031480402).

NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants: Resolution of Generic Technical Activity A-36," July 1980 (ADAMS Accession No. ML070250180).

NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, November 1980 (ADAMS Accession No. ML040420012).

NUREG-0660, "NRC Action Plan Developed as a Result of the TMI-2 Accident," May 1980 (ADAMS Accession No. ML072470526).

NUREG-0696, "Functional Criteria for Emergency Response Facilities," February 1981 (ADAMS Accession No. ML051390358).

NUREG-0700, "Human-System Interface Design Review Guidelines," Revision 2, May 2002 (ADAMS Accession No. ML021700373) .

NUREG-0711, "Human Factors Engineering Program Review Model," Revision 3, November 2012 (ADAMS Accession No. ML12324A013).

NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980 (ADAMS Accession No. ML051400209).

NUREG-0737, Supplement 1, "Clarification of TMI Action Plan Requirements: Requirements for Emergency Response Capability," January 1983 (ADAMS Accession No. ML102560009).

NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," March 2007 (ADAMS Accession No. ML092330826).

NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," "Introduction—Part 2: Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: Small Modular Reactor Edition," January 2014 (ADAMS Accession No. ML13207A315).

NUREG-0899, "Guidelines for the Preparation of Emergency Operating Procedures—Resolution of Comments on NUREG-0799," August 1982 (ADAMS Accession No. ML102560007).

NUREG-0933, "Resolution of Generic Safety Issues," December 2011.

NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 11, February 2017 (ADAMS Accession No. ML17038A432).

NUREG-1220, "Training Review Criteria and Procedures," Revision 1, January 1993 (ADAMS Accession No. ML102571869).

NUREG-1301, "Offsite Dose Calculation Manual Guidance: Standard Radiological Effluent Controls for Pressurized Water Reactors," April 1991 (ADAMS Accession No. ML091050061).

NUREG-1342, "A Status Report Regarding Industry Implementation of Safety Parameter Display Systems," April 1989 (ADAMS Accession No. ML090060585).

NUREG-1736, "Consolidated Guidance: 10 CFR Part 20—Standards for Protection against Radiation," October 2001 (ADAMS Accession No. ML013330106).

NUREG-1791, "Guidance for Assessing Exemption Requests from the Nuclear Power Plant Licensed Operator Staffing Requirements Specified in 10 CFR 50.54(m)," July 2005 (ADAMS Accession No. ML052080125).

NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Revision 2, December 2010 (ADAMS Accession No. ML103490041).

NUREG-1935, "State-of-the-Art Reactor Consequence Analyses (SOARCA) Report," November 2012 (ADAMS Accession No. ML12332A057).

NUREG/CR-0660, "Enhancement of On-Site Emergency Diesel Generator Reliability," February 1979 (ADAMS Accession No. ML083590037).

NUREG/CR-1677, Volumes I and II, "Piping Benchmark Problems," August 1980.

NUREG/CR-1980, "Dynamic Analysis of Piping Using the Structural Overlap Method," March 1981.

NUREG/CR-2858, "PAVAN: An Atmospheric-Dispersion Program for Evaluating Design-Basis Accidental Releases of Radioactive Materials from Nuclear Power Stations," November 1982 (prepared by Pacific Northwest Laboratory (PNL-4413)) (ADAMS Accession No. ML12045A149).

NUREG/CR-2919, "XOQDOQ: Computer Program for the Meteorological Evaluation of Routine Effluent Releases at Nuclear Power Stations," September 1982 (prepared by Pacific Northwest Laboratory (PNL-4380)) (ADAMS Accession No. ML081360412).

NUREG/CR-3331/ORNL/TM-8781, "A Methodology for Allocation of Nuclear Power Plant Control Functions to Human and Automated Control," August 1983.

NUREG/CR-3587, "Identification and Evaluation of Facilitation Techniques for Decommissioning Light Water Power Reactors," June 1986. (ADAMS Accession No. ML081360413).

NUREG/CR-4013 (PNL-5270), "LADTAP II—Technical Reference and User Guide," April 1986. (ADAMS Accession No. ML14098A069).

NUREG/CR-4653 (PNL-5907), "GASPAR II—Technical Reference and User Guide," March 1987. (ADAMS Accession No. ML14098A066).

NUREG/CR-5347, "Recommendations for Resolution of Public Comments on USI A-40, 'Seismic Design Criteria,'" June 1989. (ADAMS Accession No. ML110030124).

NUREG/CR-6303, "Method for Performing Diversity and Defense-in-Depth Analyses of Reactor Protection Systems," December 1994. (ADAMS Accession No. ML071790509).

NUREG/CR-6331, "Atmospheric Relative Concentrations in Building Wakes," Revision 1, May 1997 (prepared by Pacific Northwest National Laboratory (PNNL-10521)). (ADAMS Accession No. ML17213A190).

NUREG/CR-6361, "Criticality Benchmark Guide for Light-Water-Reactor Fuel in Transportation and Storage Packages," March 1997.

NUREG/CR-6393, "Integrated System Validation: Methodology and Review Criteria," 1997.

NUREG/CR-6698, "Guide for Validation of Nuclear Criticality Safety Calculational Methodology," January 2001. (ADAMS Accession No. ML050250061).

NUREG/CR-6728, "Technical Basis for Revision of Regulatory Guidance on Design Ground Motions: Hazard- and Risk-Consistent Ground Motion Spectra Guidelines," October 2001. (ADAMS Accession No. ML013100232).

NUREG/CR-6838, "Technical Basis for Regulatory Guidance for Assessing Exemption Requests from the Nuclear Power Plant Licensed Operator Staffing Requirements Specified in 10 CFR 50.54(m)," February 2004. (ADAMS Accession No. ML040580289).

NUREG/CR-7126/BNL-NUREG-96654-2011, "Human-Performance Issues Related to the Design and Operation of Small Modular Reactors," June 2012. (ADAMS Accession No. ML12179A170).

NUREG/CR-7202/BNL-96809-2012, "NRC Reviewer Aid for Evaluating the Human-Performance Aspects Related to the Design and Operation of Small Modular Reactors," June 2015. (ADAMS Accession No. ML15182A199).

Regulatory Guides (<https://www.nrc.gov/reading-rm/doc-collections/reg-guides/power-reactors/rq/>)

Regulatory Guide 1.1, "Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal System Pumps (Safety Guide 1)," November 1970.

Regulatory Guide 1.6, "Independence between Redundant Standby (Onsite) Power Sources and between Their Distribution Systems (Safety Guide 6)," March 1971.

Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment," Revision 3, March 2007.

Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," Revision 3, May 2000; Revision 4, June 2019.

Regulatory Guide 1.12, "Nuclear Power Plant Instrumentation for Earthquakes," Revision 2, March 1997; Revision 3, November 2017.

Regulatory Guide 1.13, "Spent Fuel Storage Facility Design Basis," Revision 2, March 2007.

Regulatory Guide 1.20, "Comprehensive Vibration Assessment Program for Reactor Internals during Preoperational and Initial Startup Testing," Revision 3, March 2007.

Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactive Material in Liquid and Gaseous Effluents and Solid Waste," Revision 2, June 2009.

Regulatory Guide 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," Revision 1, March 2007.

Regulatory Guide 1.26, "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants," Revision 4, March 2007; Revision 5, February 2017.

Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Power Plants," Revision 3, November 2015.

Regulatory Guide 1.28, "Quality Assurance Program Criteria (Design and Construction)," Revision 4, June 2010; Revision 5, October 2017.

Regulatory Guide 1.29, "Seismic Design Classification," Revision 4, March 2007; Revision 5, July 2016.

Regulatory Guide 1.31, "Control of Ferrite Content in Stainless Steel Weld Metal," Revision 4, October 2013.

Regulatory Guide 1.32, "Criteria for Power Systems for Nuclear Power Plants," Revision 3, March 2004.

Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, February 1978; Revision 3, June 2013.

Regulatory Guide 1.34, "Control of Electroslag Weld Properties," Revision 1, March 2011.

Regulatory Guide 1.36, "Nonmetallic Thermal Insulation for Austenitic Stainless Steel," Revision 1, May 2015.

Regulatory Guide 1.37, "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants," Revision 1, March 2007.

Regulatory Guide 1.41, "Preoperational Testing of Redundant Onsite Power Systems To Verify Proper Load Group Assignments," Revision 1 (draft), November 2012.

Regulatory Guide 1.43, "Control of Stainless Steel Weld Cladding of Low-Alloy Steel Components," Revision 1, March 2011.

Regulatory Guide 1.44, "Control of the Processing and Use of Stainless Steel," Revision 1, March 2011.

Regulatory Guide 1.45, "Guidance on Monitoring and Responding to Reactor Coolant System Leakage," Revision 1, May 2008.

Regulatory Guide 1.47, "Bypassed and Inoperable Status Indication for Nuclear Power Plant Safety Systems," Revision 1, February 2010.

Regulatory Guide 1.50, "Control of Preheat Temperature for Welding of Low-Alloy Steel," Revision 1, March 2011.

Regulatory Guide 1.52, "Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Post-Accident Engineered-Safety-Feature Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants," Revision 4, September 2012.

Regulatory Guide 1.53, "Application of the Single-Failure Criterion to Safety Systems," Revision 2, November 2003.

Regulatory Guide 1.57, "Design Limits and Loading Combinations for Metal Primary Reactor Containment System Components," Revision 2, May 2013.

Regulatory Guide 1.59, "Design Basis Floods for Nuclear Power Plants," Revision 2, August 1977.

Regulatory Guide 1.60, "Design Response Spectra for Seismic Design of Nuclear Power Plants," Revision 2, July 2014.

Regulatory Guide 1.61, "Damping Values for Seismic Design of Nuclear Power Plants," Revision 1, March 2007.

Regulatory Guide 1.62, "Manual Initiation of Protective Actions," Revision 1, June 2010.

Regulatory Guide 1.63, "Electric Penetration Assemblies in Containment Structures for Nuclear Power Plants," Revision 3, February 1987.

Regulatory Guide 1.68, "Initial Test Programs for Water-Cooled Nuclear Power Plants," Revision 3, March 2007; Revision 4, June 2013.

Regulatory Guide 1.69, "Concrete Radiation Shields and Generic Shield Testing for Nuclear Power Plants," Revision 1, May 2009.

Regulatory Guide 1.71, "Welder Qualification for Areas of Limited Accessibility," Revision 1, March 2007.

Regulatory Guide 1.73, "Qualification Tests for Safety-Related Actuators in Nuclear Power Plants," Revision 1, October 2013.

Regulatory Guide 1.75, "Criteria for Independence of Electrical Safety Systems," Revision 3, February 2005.

Regulatory Guide 1.76, "Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants," Revision 1, March 2007.

Regulatory Guide 1.77, "Assumptions Used for Evaluating a Control Rod Ejection Accident for Pressurized Water Reactors, May 1974.

Regulatory Guide 1.78, "Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release," Revision 1, December 2001.

Regulatory Guide 1.81, "Shared Emergency and Shutdown Electric Systems for Multi-Unit Nuclear Power Plants," Revision 1, January 1975.

Regulatory Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident," Revision 4, March 2012.

Regulatory Guide 1.84, "Design, Fabrication, and Materials Code Case Acceptability, ASME Section III," Revision 37, March 2017.

Regulatory Guide 1.89, "Environmental Qualification of Certain Electric Equipment Important to Safety for Nuclear Power Plants," Revision 1, June 1984.

Regulatory Guide 1.91, "Evaluations of Explosions Postulated To Occur on Transportation Routes Near Nuclear Power Plants," Revision 2, April 2013.

Regulatory Guide 1.92, "Combining Modal Responses and Spatial Components in Seismic Response Analysis," Revision 3, September 2012.

Regulatory Guide 1.97, "Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants," Revision 3, May 1983; Revision 4, June 2006; Revision 5, April 2019.

Regulatory Guide 1.99, "Radiation Embrittlement of Reactor Vessel Materials," Revision 2, May 1988.

Regulatory Guide 1.100, "Seismic Qualification of Electric and Mechanical Equipment for Nuclear Power Plants," Revision 3, September 2009.

Regulatory Guide 1.102, "Flood Protection for Nuclear Power Plants," Revision 1, September 1976.

Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor-Operated Valves," Revision 2, February 2012.

Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I," Revision 1, October 1977.

Regulatory Guide 1.110, "Cost-Benefit Analysis for Radwaste Systems for Light-Water-Cooled Nuclear Power Reactors," Revision 1, October 2013.

Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors," Revision 1, July 1977.

Regulatory Guide 1.112, "Calculation of Releases of Radioactive Materials in Gaseous and Liquid Effluents from Light-Water-Cooled Power Reactors," Revision 1, March 2007.

Regulatory Guide 1.113, "Estimating Aquatic Dispersion of Effluents from Accidental and Routine Reactor Releases for the Purpose of Implementing Appendix I," Revision 1, April 1977.

Regulatory Guide 1.115, "Protection Against Turbine Missiles," Revision 2, January 2012.

Regulatory Guide 1.117, "Protection Against Extreme Wind Events and Missiles for Nuclear Power Plants," Revision 2, July 2016.

Regulatory Guide 1.118, "Periodic Testing of Electric Power and Protection Systems," Revision 3, April 1995.

Regulatory Guide 1.122, "Development of Floor Design Response Spectra for Seismic Design of Floor-Supported Equipment or Components," Revision 1, February 1978.

Regulatory Guide 1.124, "Service Limits and Loading Combinations for Class 1 Linear-Type Supports," Revision 3, July 2013.

Regulatory Guide 1.128, "Installation Design and Installation of Vented Lead-Acid Storage Batteries for Nuclear Power Plants," Revision 2, February 2007.

Regulatory Guide 1.129, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants," Revision 2, February 2007; Revision 3, September 2013.

Regulatory Guide 1.130, "Service Limits and Loading Combinations for Class 1 Plate-and-Shell-Type Component Supports," Revision 3, July 2013.

Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors," Revision 1, May 1981.

Regulatory Guide 1.140, "Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Normal Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants," Revision 2, June 2001; Revision 3, August 2016.

Regulatory Guide 1.141, "Containment Isolation Provisions for Fluid Systems," Revision 1, July 2010.

Regulatory Guide 1.142, "Safety-Related Concrete Structures for Nuclear Power Plants (Other Than Reactor Vessels and Containments)," Revision 2, November 2001.

Regulatory Guide 1.143, "Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants," Revision 2, November 2001.

Regulatory Guide 1.145, "Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants," Revision 1, February 1983.

Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1," Revision 18, March 2017.

Regulatory Guide 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator Training, License Examinations, and Applicant Experience Requirements," Revision 4, April 2011.

Regulatory Guide 1.151, "Instrument Sensing Lines," Revision 1, July 2010.

Regulatory Guide 1.153, "Criteria for Safety Systems," Revision 1, June 1996.

Regulatory Guide 1.155, "Station Blackout," August 1988.

Regulatory Guide 1.156, "Qualification of Connection Assemblies for Nuclear Power Plants," Revision 1, July 2011.

Regulatory Guide 1.157, "Best-Estimate Calculations of Emergency Core Cooling System Performance," May 1989.

Regulatory Guide 1.158, "Qualification of Safety-Related Lead Storage Batteries for Nuclear Power Plants," February 1989.

Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 3, May 2012.

Regulatory Guide 1.166, "Pre-Earthquake Planning and Immediate Nuclear Power Plant Operator Postearthquake Actions," March 1997.

Regulatory Guide 1.168, "Verification, Validation, Reviews, and Audits for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," Revision 2, July 2013.

Regulatory Guide 1.169, "Configuration Management Plans for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," Revision 1, July 2013.

Regulatory Guide 1.170, "Test Documentation for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," Revision 1, July 2013.

Regulatory Guide 1.171, "Software Unit Testing for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," Revision 1, July 2013.

Regulatory Guide 1.172, "Software Requirement Specifications for Digital Computer Software and Complex Electronics Used in Safety Systems of Nuclear Power Plants," Revision 1, July 2013.

Regulatory Guide 1.173, "Developing Software Life Cycle Processes for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," Revision 1, July 2013.

Regulatory Guide 1.180, "Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Systems," Revision 1, October 2003.

Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," July 2000.

Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants," Revision 3, February 2018.

Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," March 2001.

Regulatory Guide 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," Revision 2, March 2017.

Regulatory Guide 1.194, "Atmospheric Relative Concentrations for Control Room Radiological Habitability Assessments at Nuclear Power Plants," June 2003.

Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," May 2003.

Regulatory Guide 1.199, "Anchoring Components and Structural Supports in Concrete," November 2003.

Regulatory Guide 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," Revision 2, March 2009.

Regulatory Guide 1.204, "Guidelines for Lightning Protection of Nuclear Power Plants," November 2005.

Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)," June 2007.

Regulatory Guide 1.208, "A Performance-Based Approach To Define the Site-Specific Earthquake Ground Motion," March 2007.

Regulatory Guide 1.209, "Guidelines for Environmental Qualification of Safety-Related Computer-Based Instrumentation and Control Systems in Nuclear Power Plants," March 2007.

Regulatory Guide 1.211, "Qualification of Safety-Related Cables and Field Splices for Nuclear Power Plants," April 2009.

Regulatory Guide 1.212, "Sizing of Large Lead-Acid Storage Batteries," Revision 1, October 2015.

Regulatory Guide 1.216, "Containment Structural Integrity Evaluation for Internal Pressure Loadings Above Design-Basis Pressure," August 2010.

Regulatory Guide 1.218, "Condition-Monitoring Techniques for Electric Cables Used in Nuclear Power Plants," April 2012.

Regulatory Guide 1.221, "Design-Basis Hurricane and Hurricane Missiles for Nuclear Power Plants," October 2011.

Regulatory Guide 1.226, "Flexible Mitigation Strategies for Beyond-Design-Basis Events," Revision 0, June 2019.

Regulatory Guide 1.227, "Wide-Range Spent Fuel Pool Level Instrumentation," Revision 0, June 2019.

Regulatory Guide 4.15, "Quality Assurance for Radiological Monitoring Programs (Inception through Normal Operations to License Termination)—Effluent Streams and the Environment," Revision 2, July 2007.

Regulatory Guide 4.21, "Minimization of Contamination and Radioactive Waste Generation: Life-Cycle Planning," June 2008.

Regulatory Guide 5.79, "Protection of Safeguards Information," April 2011.

Regulatory Guide 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations Will Be as Low as Is Reasonably Achievable," Revision 3, June 1978.

Regulatory Guide 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposures as Low as Is Reasonably Achievable," Revision 2, August 2016.

Regulatory Guide 8.15, "Acceptable Programs for Respiratory Protection," October 1976.

Regulatory Guide 8.19, "Occupational Radiation Dose Assessment in Light-Water Reactor Power Plants—Design Stage Man-Rem Estimates," Revision 1, June 1979.

Regulatory Guide 8.25, "Air Sampling in the Workplace," Revision 1, June 1992.

Regulatory Guide 8.27, "Radiation Protection Training for Personnel at Light-Water-Cooled Nuclear Power Plants," Revision 0, March 1981.

Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas in Nuclear Power Plants," Revision 1, May 2006.

Bulletins

Bulletin 80-10, "Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release of Radioactivity to Environment," May 1980.

Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity," March 2002. (ADAMS Accession No. ML020770497).

Bulletin 2012-01, "Design Vulnerability in Electric Power System," July 2012. (ADAMS Accession No. ML12074A115).

Other NRC Documents

Branch Technical Position (BTP) 3-3, "Protection against Postulated Piping Failures in Fluid Systems Outside Containment," Revision 3, March 2007 (ADAMS Accession No. ML070800027).

BTP 3-4, "Postulated Rupture Locations in Fluid System Piping Inside and Outside Containment," Revision 2, March 2007 (ADAMS Accession No. ML070800008).

BTP 5-1, "Monitoring of Secondary Side Water Chemistry in PWR Steam Generators," Revision 3, March 2007.

BTP 5-2, "Overpressurization Protection of Pressurized-Water Reactors While Operating at Low Temperatures," March 2007.

BTP 6-1, "pH for Emergency Coolant Water for Pressurized Water Reactors," March 2007.

BTP 7-10, "Guidance on Application of Regulatory Guide 1.97," Revision 5, March 2007.

BTP 8-3, "Stability of Offsite Power Systems."

BTP 8-6, "Adequacy of Station Electric Distribution System Voltages."

BTP 8-9, "Open Phase Conditions in Electric Power System."

BTP 10-2, "Design Guidelines for Avoiding Water Hammers in Steam Generators."

BTP 11-3, "Design Guidance for Solid Waste Management Systems Installed in Light-Water-Cooled Nuclear Power Reactor Plants," Revision 4, January 2016.

BTP 11-5, "Postulated Radioactive Releases Due to a Waste Gas System Leak or Failure," Revision 3, March 2007.

BTP 11-6, "Postulated Radioactive Releases Due to Liquid Containing Tank Failures," Draft Revision 4, August 2014.

Design Certification/Combined License—Interim Staff Guidance (DC/COL-ISG)-1, "Interim Staff Guidance on Seismic Issues Associated with High Frequency Ground Motion in Design Certification and Combined License Applications," May 1998 (ADAMS Accession No. ML081400293).

DC/COL-ISG-7, "Interim Staff Guidance on Assessment of Normal and Extreme Winter Precipitation Loads on the Roofs of Seismic Category I Structures," June 2009. (ADAMS Accession No. ML091490556).

DC/COL-ISG-017, "Interim Staff Guidance on Ensuring Hazard-Consistent Seismic Input for Site Response and Soil Structure Interaction Analyses," March 2010 (ADAMS Accession No. ML100570203).

DC/COL-ISG-019, "Final Interim Staff Guidance—Review of Evaluation To Address Gas Accumulation Issues in Safety Related Systems and Systems Important to Safety," September 2011. (ADAMS Accession No. ML111110572).

DC/COL-ISG-028, "Assessing the Technical Adequacy of the Advanced Light-Water Reactor Probabilistic Risk Assessment for the Design Certification Application and Combined License Application," November 2016 (ADAMS Accession No. ML16130A468).

DI&C-ISG-04, "Highly Integrated Control Rooms: Communications Issues," Revision 1, March 2009 (ADAMS Accession No. ML083310185).

DSS-ISG-2010-01, "Staff Guidance Regarding the Nuclear Criticality Safety Analysis for Spent Fuel Pools," Revision 0, October, 2011 (ADAMS Accession No. ML110620086).

A-12-049, "Issuance of Order To Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," March 2012. (ADAMS Accession No. ML12054A735).

EA-12-051, "Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," March 2012. (ADAMS Accession No. ML12056A044).

Enclosure 2, "NRC Staff Review Guidance Regarding Generic Letter 2004-02 Closure in the Area of Coatings Evaluation," to "Revised Guidance for Review of Final Licensee Responses to Generic Letter 2004-02, 'Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors,'" March 2008. (ADAMS Accession No. ML080230234).

Generic Letter (GL) 85-06, "Quality Assurance Guidance for ATWS Equipment That Is Not Safety-Related," April 1985. (ADAMS Accession No. ML031140390)

GL 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants," March 1988.

GL 89-01, "Implementation of Programmatic and Procedural Controls for Radiological Effluent Technical Specifications," Supplement No. 1, November 1990.

GL 89-08, "Erosion/Corrosion-Induced Pipe Wall Thinning," May 1989.

GL 91-04, "Changes in Technical Specification Surveillance Intervals To Accommodate a 24-Month Fuel Cycle," April 1991.

GL 96-03, "Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits," January 1996.

Generic Safety Issue 191 (GSI-191), "Pressurized-Water Reactor Sump Performance Action Plan," March 2016 (ADAMS Accession No. ML16054A259).

Information Notice (IN) 2005-24, "Nonconservatism in Leakage Detection Sensitivity," August 3, 2005. (ADAMS Accession No. ML051780073).

Inspection Procedure (IP) 35017, "Quality Assurance Implementation Inspection," July 2008 (ADAMS Accession No. ML081410388).

IP 35034, "Design Certification Testing Inspection," January 2010 (ADAMS Accession No. ML082140148).

IP 36100, "Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance," May 2019 (ADAMS Accession No. ML19087A149).

IP 42454, "Part 52, Emergency Operating Procedures," September 2013 (ADAMS Accession No. ML13232A368).

Inspection Report, "Nuclear Regulatory Commission Inspection Report of Siet S.p.A. No. 99901437/2013-201," January 2014 (ADAMS Accession No. ML14023A613).

Inspection Report, "Nuclear Regulatory Commission Inspection Report 99901418/2013-201 and Notice of Violation," April 2013 (ADAMS Accession No. ML13098A338). Inspection Report,

Inspection Report 05200048/2017-201, "Nuclear Regulatory Commission Inspection of the Quality Assurance Program Implementation Inspection of NuScale Power, LLC," July 2017 (ADAMS Accession No. ML17201J382).

Inspection Report 05200048/2019-201, "Nuclear Regulatory Commission Inspection of NuScale Power LLC," April 2019 (ADAMS Accession No. ML19093A669).

License Renewal Issue No. 98-0030, "Thermal Aging Embrittlement of Cast Austenitic Stainless Steel Components," May 19, 2000 (ADAMS Accession No. ML003717179).

Materials Reliability Program (MRP)-227, "Safety Evaluation by the Office of Nuclear Reactor Regulation Materials Reliability Program: Pressurized Water Reactor Internals Inspection and Evaluation Guidelines," Revision 0, March 28, 2011 (ADAMS Accession No. ML110820773).

Memorandum from L.W. Camper (NRC) to D.B. Matthews (NRC) and E.E. Collins (NRC), "List of Decommissioning Lessons-Learned in Support of the Development of a Standard Review Plan for New Reactor Licensing," October 10, 2006 (ADAMS Accession No. ML062620355).

NRC white paper, "Piping Level of Detail for Design Certification," March 4, 2014 (ADAMS Accession No. ML14065A067).

NSIR/DPR-ISG-01, "Interim Staff Guidance—Emergency Planning for Nuclear Power Plants," November 2011 (ADAMS Accession No. ML113010523).

"Nuclear Regulatory Commission Inspection of NuScale Power LLC Inspection Report No. 99901351/2015-201 and Notice of Violation," October 2015 (ADAMS Accession No. ML15268A186).

Office Instruction, NRO-REG-100, "Acceptance Review Process for Early Site Permit, Design Certification, and Combined License Applications," Revision 2, December 2014 (ADAMS Accession No. ML14078A152).

Regulatory Issue Summary (RIS) 2006-17, "NRC Staff Position on the Requirements of 10 CFR 50.36, 'Technical Specifications,' Regarding Limiting Safety System Settings during Periodic Testing and Calibration of Instrument Channels," August 2006.

"Response to NuScale Gap Analysis Summary Report for Reactor Systems Reactivity Control System, Addressing Gap 11, General Design Criterion 27," September 2016 (ADAMS Accession No. ML16116A083).

Responses to Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," April 2010. (ADAMS Accession No. ML100960495).

RIS 2008-05, "Lessons Learned To Improve Inspections, Tests, Analyses, and Acceptance Criteria Submittal," Revision 1, September 2010.

RIS 2008-32, "Interim Low-Level Radioactive Waste Storage at Reactor Sites," December 2008.

Technical Specification Task Force (TSTF) Traveler 493, "Clarify Application of Setpoint Methodology for LSSS Functions," Revision 4.

“Thermal Aging Embrittlement of Cast Austenitic Stainless-Steel Components,” from the NRC’s Christopher Grimes to the Nuclear Energy Institute (NEI), May 2000 (ADAMS Accession No. ML15223A635).

Other Miscellaneous Documents

ASCE/SEI 43-05, “Seismic Design Criteria for Structures, Systems, and Components in Nuclear Facilities,” American Society of Civil Engineers/Structural Engineering Institute, 2005.

ACI 318, “Building Code Requirements for Structural Concrete,” American Concrete Institute, 2008.

AHRI 410-2001, “Forced-Circulation Air Cooling and Air Heating Coils,” 2001, Air-Conditioning, Heating, and Refrigeration Institute.

AISC, “Manual of Steel Construction,” 9th Edition, American Institute of Steel Construction, 1989.

AMCA Standard 210-07, “Laboratory Methods of Testing Fans for Aerodynamic Performance Rating,” Revision 2007, Air Movement and Control Association International, Inc.

AMCA Standard 300-14, “Reverberant Room Method for Sound Testing of Fans,” Revision 2014, Air Movement and Control Association International, Inc.

API 620, “Design and Construction of Large Welded Low Pressure Storage Tanks,” 12th edition, November 2014, American Petroleum Institute.

ASHRAE Standard 33-2000, “Methods of Testing Forced Circulation Air Cooling and Air Heating Coils,” American Society of Heating, Refrigerating and Air-Conditioning Engineers.

ASHRAE Standard 33-2016, “Methods of Testing for Rating Forced Circulation Air Cooling and Air Heating Coils,” American Society of Heating, Refrigerating and Air-Conditioning Engineers.

ASHRAE Standard 52.2-2012, “Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size,” American Society of Heating, Refrigerating and Air-Conditioning Engineers.

American Welding Society, D1.1-2010, “Structural Welding Code—Steel,” 2010.

Böhlke, Steffen, Christoph Schuster, and Antonio Hurtado, “About the Volatility of Boron in Aqueous Solutions of Borates with Vapour in Relevance to BWR-Reactors,” International Conference on the Physics of Reactors, “Nuclear Power: A Sustainable Resource,” Interlaken, Switzerland, September 14–19, 2008.

BNL Technical Report No. 20918-1-2015, “Methodology To Assess the Workload of Challenging Operational Conditions in Support of Minimum Staffing Level Reviews,” March 2015, Brookhaven National Laboratory (ADAMS Accession No. ML15083A205).

CMAA-70-2010, "Specifications for Top Running Bridge & Gantry Type Multiple Girder Electric Overhead Traveling Cranes," 2010, Crane Manufacturers Association of America.

Framatome ANP 10337NP-A, "PWR Fuel Assembly Structural Response to Externally Applied Dynamic Excitations," Revision 0, April 2018, Framatome Inc. Topical Report (ADAMS Accession No. ML18144A821).

Framatome, BAW-10227P-A, "Evaluation of Advanced Cladding and Structural Material (M5) in PWR Reactor Fuel," Revision 1, June 2003 (ADAMS Accession No. ML15162B043).

Framatome, BAW-10231P-A, "COPERNIC Fuel Rod Design Computer Code," Revision 1, January 2004 (ADAMS Accession No. ML042930233).

Framatome, BAW-10240 (NP-A), "Incorporation of M5™ Properties in Framatome ANP Approved Methods," May 2004 (ADAMS Accession No. ML042800314).

IAEA-TECDOC-1336, "Combined Methods for Liquid Radioactive Waste Treatment," February 2003, International Atomic Energy Agency.

International Society of Automation, ISA-S67.04, "Setpoints for Safety-Related Instrumentation Used in Nuclear Power Plants," Part 1, "Setpoints for Nuclear Safety Related Instrumentation," 1994.

National Fire Protection Association (NFPA) 1, "National Fire Code," 2015 Edition, National Fire Protection Association.

NFPA 10, "Standard for Portable Fire Extinguishers."

NFPA 13, "Standard for the Installation of Sprinkler Systems," 2016 Edition, National Fire Protection Association.

NFPA 14, "Standard for the Installation of Standpipe and Hose Systems."

NFPA 20, "Standard for the Installation of Stationary Pumps for Fire Protection," National Fire Protection Association.

NFPA 22, "Standard for Water Tanks for Private Fire Protection," National Fire Protection Association.

NFPA 24, "Standard for the Installation of Private Fire Service Mains and Their Appurtenances," National Fire Protection Association.

NFPA 55, "Compressed Gases and Cryogenic Fluids Code," 2013 Edition.

NFPA 70, "National Electrical Code (NEC)," 2014 Edition, National Fire Protection Association.

NFPA 72, "National Fire Alarm Code," National Fire Protection Association.

NFPA 80, "Standard for Fire Doors and Other Opening Protectives," 2016 Edition, National Fire Protection Association.

NFPA 80A, "Recommended Practice for Protection of Buildings from External Fire Exposures," 2012 Edition, National Fire Protection Association.

NFPA 90A, "Standard for the Installation of Air-Conditioning and Ventilating Systems," 2015 Edition, National Fire Protection Association.

NFPA 101, "Life Safety Code," 2015 Edition, National Fire Protection Association.

NFPA 105, "Standard for Smoke Door Assemblies and Other Opening Protectives," 2016 Edition, National Fire Protection Association.

NFPA 251, "Standard Methods of Tests of Fire Endurance of Building Construction and Materials," National Fire Protection Association.

NFPA 804, "Standard for Fire Protection for Advanced Light Water Reactor Electric Generating Plants," 2015 Edition, National Fire Protection Association, Quincy, MA.

NUMARC 87-00, "Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors," November 1987.

Oak Ridge National Laboratory, ORNL/TM-2005/39, "SCALE: A Comprehensive Modeling and Simulation Suite for Nuclear Safety Analysis and Design," Version 6.1, June 2011.

Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) 1966, "HVAC Duct Construction Standards—Metal and Flexible," Third Edition, 2005.

SMACNA 1520, "Round Industrial Duct Construction Standards," Second Edition, 1999.

SMACNA, "Rectangular Industrial Duct Construction Standards," Second Edition, 2004.

SMACNA 1966, "HVAC Duct Construction Standards—Metal & Flexible," Third Edition, 2005.

SMACNA 1780, "HVAC Systems Testing, Adjusting and Balancing," Third Edition, 2002.

Siemens Power Corporation, EMF-92-116(P)(A), "Generic Mechanical Design Criteria for PWR Fuel Designs," Revision 0, February 1999 (ADAMS Accession No. ML003681173).

Underwriters Laboratories, Inc., UL 555, "Standard for Fire Dampers," 7th Edition, July 2006.

Underwriters Laboratories, Inc., UL 555S, "Standard for Smoke Dampers," 5th Edition, February 2014.

Underwriters Laboratories, Inc., UL 586, "High-Efficiency, Particulate, Air Filter Units," 9th Edition, August 2009.

Underwriters Laboratories, Inc., UL 900, "Standard for Air Filter Units," 8th Edition, April 2015.

Underwriters Laboratories, Inc., UL 1995, "Heating and Cooling Equipment," 4th Edition.

U.S. Army Corps of Engineers, USACE EM 1110-1-1904, "Settlement Analysis," 1990.

U.S. Army Corps of Engineers Protective Design Center TR-06-08, "Single Degree Freedom Structural Response Limits for Antiterrorism Design, Department of Defense Single Degree of Freedom Blast Design Spreadsheet (SBEDS), BlastX—Fast Running Model for Airblast Prediction Involving Internal and External Detonations, In Structure Shock (ISS) 3D, and LS-Dyna Finite Element Analysis Software."

U.S. Department of Defense (DOD), Uniform Facility Code (UFC) 4-023-08, "Design to Resist Direct Fire Weapon Effects," July 2008.

DOD, UFC 3-040-01, "Design and Analysis of Hardened Structures to Conventional Weapons Effects," 2015.

DOD, UFC 3-340-02, "Structures To Resist the Effect of Accidental Explosion," 2008.

U.S. Department of Energy, DOE-HDBK-1169-2003, "Nuclear Air Cleaning Handbook," November 2003.

WCAP-16530-NP-A, "Evaluation of Post-Accident Chemical Effects in Containment Sump Fluids to Support GSI-191," 2008, Westinghouse.

WCAP-16793-NP, "Evaluation of Long-Term Cooling Considering Particulate, Fibrous, and Chemical Debris in the Recirculating Fluid," 2011, Westinghouse.