

Plant Engineering Product List



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Buried Pipe

3002020823	Non-Destructive Evaluation (NDE) of Metallic Substrates through Carbon Fiber Reinforced Polymer (CFRP) Composite Repair Systems, March 2022
3002022449	Fitness for Service and Ultrasonic Inspections of Prestressed Concrete Cylinder Pipe, October 2021
3002018355	Buried Pipe Corrosion Rate Testing: 3-Year Experimental Results for Multiple Materials and Variables August 2020
3002018353	The Buried and Underground Piping and Tank Reference Guide: Revision 2, June 2021
3002018352	Recommendations for an Effective Program to Control the Degradation of Buried and Underground Piping and Tanks (1016456, Revision 2) November 2020
3002014443	Condition Assessment and Ultrasonic Inspections of Pre-Stressed Concrete Cylinder Pipe, December 2018
3002013207	BPWORKS V3.0: Data Management and Risk Ranking for Buried Underground and Raw Water Piping, November 2018
3002013156	Roadmap to Integrity Evaluation and Repair of Nuclear Plant Piping, December 2018
3002013027	Advanced Nuclear Technology: Guidance on the Application of High-Density Polyethylene Piping, June 2018
3002010598	Resource on Unmitigated Loads over Buried Pipe, December 2017
3002010596	Geo-Electrical Subsurface Leak Detection and Monitoring at Nuclear Power Plants: Phase 1 Feasibility Report, December 2018
3002008067	Ultrasonic Pipe Wall Thickness Measurement of Coated Buried Pipe: Phase II Report, July 2016
3002008032	Development and Evaluation of Guided Wave Structural Health Monitoring for Buried Pipe, October 2016
3002008013	Assessment of Available Nondestructive Evaluation Techniques for Selective Leaching: Technology Review, December 2016
3002005462	2015 Underground Piping and Tank Integrity (UPTI) State-of-the-Fleet Self-Assessments, December 2015
3002005294	Soil Sampling and Testing Methods to Evaluate the Corrosivity of the Environment for Buried Piping and Tanks at Nuclear Power Plants, November 2015
3002005463	Data Mining of Buried Pipe Inspection Results Data (BPIRD), August 2015
3002004395	Nondestructive Evaluation: Buried Pipe NDE Reference Guide—Revision 3, December 2014
3002003189	2014 Underground Piping and Tank Integrity (UPTI) State-of-the-Fleet Self-Assessments, December 2014
3002003057	Interim Guidelines for Determining the Corrosion Rate for Use in Fitness for Service Evaluations of Buried Pipe, December 2014
3002003071	Guidelines for Tank Inspections, November 2014
3002003917	Buried Pipe Inspection Results Database Web Application (BPIRDWeb), Version 1.0.3, May 2014
3002000599	Guidelines for the Evaluation of Cracks in Cement Linings and Coatings, December 2013
3002000635	Using Acoustic Emission Principles for Leak Detection on Buried Pipe with Flow, July 2013

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1025256	A Literature Review of Soil-Side Corrosion Rates for Buried Metallic Piping, September 2012
1025272	Plant Engineering: Compilation of Lessons Learned on Buried and Underground Piping in Nuclear Power Plants, November 2012
1022963	Plant Engineering: Early Detection of Leaks in Buried Piping, June 2011
3002013272	Computer Based Training (CBT) Buried Pipe Condition Assessment and Repair, Version 1.0, December 2011
1022962	Evaluation of Indirect Assessment Techniques for Coating Flaw Detection, December 2011
1019179	Capacity Testing of Cured-in-Place Pipe, December 2009
1016687	Buried Pipe End-of-Expected-Life Considerations and the Need for Planning, December 2008
1016676	Catawba Field Trial of EPRI's Large Diameter Buried Pipeline Instrumented Vehicle, December 2008
1016675	Nondestructive Evaluation: Further Developments of Guided Wave Examination Application, December 2008
1015056	Examination of Large Diameter Buried Piping for Small Pit Detection and Preferential Weld Corrosion Attack, December 2007
1013480	Design and Qualification of Cured-in-Place Liners for the Rehabilitation of ASME Safety Class 3 Piping Systems, December 2006
1013468	Condition Assessment of Large Diameter Buried Piping, Phase 3 – Field Trial, December 2006
1011829	Condition Assessment of Large Diameter Buried Piping, Phase 2 – Vehicle Design and Construction, December 2005
1007947	Buried Pipe Condition Assessment with Instrumented Vehicles, November 2003
1000115	Evaluation of Torsional Guided Waves for Inspection of Service Water Piping, December 2000
TR-106013	Cured-in-Place Piping for Structural and Pressure Boundary Integrity: Interim Report, December 1995

Cables

Cable Aging Management

3002019656	Plant Electrical Equipment Reliability Wiki (PEER) v1.0, June 2021
3002018281	Wireless Technologies as a Replacement for Degraded Cable Systems, May 2020
3002013173	Cable Polymer Material Handbook - Instrument Cable, December 2018
3002010641	Low-Voltage and Instrumentation and Control Cable Aging Management Guide, Revision 1, December 2017
3002010637	Cable Polymer Material Handbook - Low Voltage Power and Control Cable, August 2017
3002007991	Plant Engineering: Low-Voltage Cable Susceptibility to Wet Aging, July 2016
3002002994	Plant Engineering: Field Guide for Harvesting Service-Aged Cable (Cable Harvesting Guide) Version 2014, October 2014
3002000557	Aging Management Program Guidance for Medium-

	Voltage Cable Systems for Nuclear Power Plants Revision 1, June 2013
3002000551	Results of Cable Rejuvenation of Severely Degraded Black Ethylene Propylene Rubber Medium-Voltage Cables, June 2013
1025259	Plant Engineering: End-of-Life Guide for Medium-Voltage Cables and Accessories, October 2012
1022969	Electrical Cable Test Applicability Matrix for Nuclear Power Plants, December 2011
1022968	Cable Aging Management Program Implementation Guidance, December 2011
1021070	Medium-Voltage Cable Aging Management Guide, Revision 1, November 2010
1019160	Failure Models and Data Analysis for Nuclear Plant Medium Voltage Cables for Consideration in Preventive Maintenance and Strategic Replacement, December 2009
1011873	Cable Polymer Aging and Condition Monitoring Research at Sandia National Laboratories Under the Nuclear Energy Plant Optimization (NEPO) Program, December 2005
1011872	Long-Term Laboratory Aging of Nuclear Plant Cables, December 2005
TR-106687	Cable Aging Management Program for D.C. Cook Nuclear Plant Units 1 and 2, January 1997
NP-7348	Cable Indenter Aging Monitor, June 1991
NP-7140	Effect of Antioxidants on Aging of Nuclear Plant Cable Insulation, February 1991

Cable System Design and Cable Specification

3002018280	Lead-Free Rubber Cable Materials: Technical Evaluation, April 2020
3002005322	Cable Polymer Handbook – Medium Voltage Insulations, December 2015
3002005321	Evaluation and Insights from Nuclear Power Plant Tan Delta Testing and Data Analysis – Update, September 2015
1025066	Plant Engineering: Advanced Nuclear Plant Cable System Design and Installation Concepts to Assure Longevity, April 2012
1019159	Common Medium Voltage Cable Specification for Nuclear Power Plants, October 2009
1001002	Investigation of Bonded Jacket Cable Insulation Failure Mechanism, May 2002
1001390	Evaluation of Moisture Intrusion into Coaxial Connectors, March 2002
1007435	Investigation of Bonded Jacket Cable Insulation Failure Mechanisms: HELB Environment Results, November 2002
NP-1767	A Study of Damageability of Electrical Cables in Simulated Fire Environments, March 1981
NP-1630	Categorization of Cable Flammability: Detection of Smoldering and Flaming Cable Fires, November 1980
NP-1200-V1	Categorization of Cable Flammability: Laboratory Evaluation of Cable Flammability Parameters, October 1979

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Cables (continued)

Cable: Low-Voltage (<1000 V) Cable Condition Assessment

3002020818	Test Protocol for Condition Monitoring of Low Voltage Cable Using Dielectrically Based Methods, October 2021
3002018282	Spread Spectrum Time Domain Reflectometry Feasibility Study Project June 2020
1022969	Electrical Cable Test Applicability Matrix for Nuclear Power Plants, December 2011
1015209	Line Impedance Resonance Analysis for Detection of Cable Damage and Degradation, June 2007
1008211	Initial Acceptance Criteria Concepts and Data for Assessing Longevity of Low-Voltage Cable Insulations and Jackets, March 2005
1001391	Training Aids for Visual/Tactile Inspection of Electrical Cables for Detection of Aging, March 2002
TR-103841	Low-Voltage Environmentally-Qualified Cable License Renewal Industry Report—Revision 1, July 1994

Cable: Medium-Voltage Cable Diagnostics

3002022397	Cable Fault Location Field Guide - Mobile App, August 2021
3002018284	Medium-Voltage Transformer and Cable Very Low Frequency (VLF) Tan Delta Testing from the Cable Termination: VLF Testing of Transformers, November 2020
3002016161	Guide for Troubleshooting Medium-Voltage Cable Fault Locating, December 2020
3002016077	Motor Cable Insulation Testing – Comparison of Tan Delta/Very Low Frequency Testing (VLF) and High Potential Testing, November 2019
3002013161	Field Guide for Very Low Frequency Tan Delta Testing of Medium-Voltage Motors and Cables from the Cable Terminations, November 2018
3002010591	Effects of 0.1 Hertz Withstand Testing on Medium-Voltage Cable Insulation, July 2017
3002005321	Plant Engineering: Evaluation and Insights from Nuclear Power Plant Tan Delta Testing and Data Analysis – Update, September 2015
1025262	Plant Engineering: Evaluation and Insights from Nuclear Power Plant Tan Delta Testing and Data Analysis, July 2012
1015070	Plant Support Engineering: Failure Mechanism Assessment of Medium Voltage Ethylene Propylene Rubber Cables, August 2007
1013085	Plant Support Engineering: Advanced Diagnostics and Life Estimation of Extruded Dielectric Cable, March 2006
1011871	Continuous On-Line Partial Discharge Monitor for Medium-Voltage Cable Feasibility Study, November 2005

Cable: Medium-Voltage Submergence Effects and Qualification

3002013176	Submergence Qualification Of Pink Okonite Medium-Voltage Cable- Final, August 2018
3002010618	Submergence Qualification of High-Temperature Kerite Medium-Voltage Cable: Final Report, December 2017

3002005323	Plant Engineering: Medium-Voltage Cable Failure Mechanism, Update 7: Evaluation of Main Factors Causing Formation of Large Water Trees in Service-Aged, Pink and Brown Ethylene Propylene Rubber-Insulated Medium-Voltage Cables, August 2015
3002005320	Plant Engineering: Submergence Qualification of Kerite HTK Medium-Voltage Cable Update-Results after Two Years of Accelerated Aging, November 2015
3002002993	Plant Engineering: Medium-Voltage Cable Failure Mechanism Research, Update 6, December 2014
3002000554	Plant Engineering: Medium-Voltage Cable Failure Mechanism Research Update 5, September 2013
1025270	Plant Engineering: Submergence Qualification of Kerite HTK Medium-Voltage Cable: Operating Experience and First Quarter of Accelerated Aging, July 2012
1025263	Plant Engineering: Dewatering Effects on Medium-Voltage Ethylene Propylene Rubber Cable, August 2012
1024894	Plant Engineering: Medium-Voltage Cable Failure Mechanism Research Update 4, March 2012
1022969	Electrical Cable Test Applicability Matrix for Nuclear Power Plants, December 2011
1022965	Medium Voltage Cable Failure Mechanism Update 3, December 2011
1021069	Medium Voltage Cable Failure Mechanism Update 2, February 2011
1018777	Failure Mechanism Assessment of Medium-Voltage Ethylene Propylene Rubber Cables - Revision 1, May 2009
1013085	Advanced Diagnostics and Life Estimation of Extruded Dielectric Cable, March 2006
1011871	Continuous On-Line Partial Discharge Monitor for Medium-Voltage Cable Feasibility Study, November 2005
1003664	Medium Voltage Cables in Nuclear Plant Applications—State of Industry and Condition Monitoring, October 2003
1025262	Plant Engineering: Evaluation and Insights from Nuclear Power Plant Tan Delta Testing and Data Analysis, July 2012
TR-107386-V1	Evaluation of the Effects of Submergence on Cables in Conduit During LOCA Testing, August 1997

Cable: Older Specialty Reports for Low-Voltage Cable

1006748	Electrical Testing of Power Plant Cables With and Without an Ionized Gas Ground Plane, March 2002
TR-112233	Polymer Specimen Removal Techniques for In-Service Cables, February 2000
TR-104075	Evaluation of Cable Polymer Aging Through Indenter Testing of In-Plant and Laboratory-Aged Specimens, January 1996

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Cathodic Protection

3002015460	Cathodic Protection Data Management and Trending Software (CPWORKS) v1.0, May 2020
3002013820	Training Module for Cathodic Protection: Cathodic Protection Training for Supervisors and Managers at Nuclear Power Plants, Version 2015, March 2018
3002013202	2017 State-of-the-Fleet Assessment of Cathodic Protection Systems, April 2018
3002010678	Summary of 2015 and 2016 State-of-the-Fleet Assessments of Cathodic Protection Systems, May 2017
3002010674	Cathodic Protection Effectiveness: A review of Protection Criteria Threshold Values and Eval of Alt Methods, October 2017
3002007903	Welding and Repair Technology Center: Thermite Welding/Pin Brazing of New Cathodic Protection Lead, October 2016
3002007627	2015 State-of-the-Fleet Assessment of Cathodic Protection Systems, June 2016
3002005253	Criteria for Determining the Effectiveness of Cathodic Protection, October 2015
3002005283	Training Module for Cathodic Protection: Cathodic Protection Training for Supervisors and Managers at Nuclear Power Plants, Version 2015, August 2015
3002005066	Corrosion Assessment of Balance-of-Plant Structures and Equipment, April 2015
3002005067	Evaluation for Installing or Upgrading Cathodic Protection Systems: A Guide for Cathodic Protection for Buried Piping and Tanks, March 2015
3002002949	Recommendations for Managing an Effective Cathodic Protection System, November 2014
3002000596	Cathodic Protection Application and Maintenance Guide: Volume 1 and Volume 2, July 2013
1025252	Cathodic Protection System Design Specification, December 2012

Circuit Breakers

3002022398	Avoiding Equipment Outages Due to Circuit Breaker Indicating Lights, November 2021
3002018277	Considerations for Extending Circuit Breaker Maintenance Intervals: An Evaluation of Maintenance Practices Considering Value-Based Maintenance, November 2020
3002015492	Circuit Breaker Fundamentals, October 2019
3002015459	Critical Maintenance Insights on Preventing High-Energy Arcing Faults, March 2019

Emergency Diesel Generators

3002020808	Emergency Diesel Generator Surveillance Intervals: An Investigation of Risk-Informed Start and Load-Run Surveillance Interval Extensions, November 2021
3002020807	Lessons Learned from EDG Excitation System Power Rectifier Events: Power Diode Aging Experience and Research Conclusions, November 2021
3002015054	Frequency Domain Characterization of Emergency Diesel Generator Speed Control Systems: A Practical Approach to Governor Tuning Standardization and Optimization, April 2019

3002012191	EMD 645E4 Diesel Engine Cylinder Assembly Elastomer Replacement, March 2018
3002010609	Storage and Use of Low-Concentration (5%) Biodiesel Blends in Nuclear Plant Emergency Diesel Generators, November 2017
3002009446	Frequency Domain Characterization of Emergency Diesel Generator Speed Control Systems: A Practical Approach to Governor Tuning Standardization and Optimization, June 2017

Engineering Processes/Programs Products

3002020840	Nuclear Engineering Wiki Link Site, October 2021
3002019656	Plant Electrical Equipment Reliability Wiki (PEER) v1.0, June 2021
3002018349	Common Design Package Content for a Non-Welded Fitting Installation in Non-Safety Related ASME B31.1 Piping Systems, November 2020
3002013246	Single Point Vulnerability Analysis Tool (SPVAT), v2.0, February 2020
3002013199	Structural Health Monitoring Study of Locations and Frequencies: Industry Survey and Gap Analysis, December 2018
3002008063	Development of a Database for Polymer Applications, December 2016
3002008007	Service Life Assessment Guide: An Aging Assessment Reliability Process, August 2016
3002008002	Nuclear Offsite Power Reliability Road Map, December 2016
1008254	Guidelines for Optimizing the Engineering Change Process for Nuclear Power Plants, Revision 2, November 2007
1014827	Plant Support Engineering: Innovative Technology Solutions Assessment, March 2007
1009745	System, Component and Program Health Reporting: Utility Best Practices, December 2004
1003050	Nuclear Power Financial Indicators for a Competitive Market, August 2001
TR-109626	Strategies for Optimizing Engineering Effectiveness in Corrective Action Programs, June 1999
TR-110089	Experience Based Interview Process for Power Plant Management: With a Pilot Application to Aging of Outage Support Equipment April 1999
TR-107541	Valuation and Management of Nuclear Assets: Nuclear Options Model (NOM, Version 1.0), December 1998
TR-107436	Effective Engineering Technical Training at Nuclear Power Plants, May 1998
NP-6608	Shelf Life of Elastomeric Components, June 1994
TR-102240	Evaluation of the Safety Benefits and Costs of Proposed Revisions to Inservice Testing Requirements for Pumps and Valves, September 1993
TR-101752	Guideline for Using Items Manufactured to Other Industry Standards in Nuclear Safety-Related Applications, May 1993
1011198	Guidelines for Use of ASME Code Case N-483, December 1992

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Engineering Processes/Programs Products (continued)

1011197	Industry Assessment of Potentially Non-Conforming Butt-Welding Elbows, December 1992
NP-7376	Guidelines for the Use of Microcomputer Applications in Safety-Related Activities (NCIG-20), July 1992
TR-100359-V1	Nuclear Power Plant Resource Book: Volumes 1 and 2, February 1992
TR-100359-V2	Nuclear Power Plant Resource Book: Volumes 1 and 2, February 1992
NP-6895	Guidelines for the Safety Classification of Systems, Components, and Parts Used in Nuclear Power Plant Applications (NCIG-17), February 1991
NP-6896	Guidelines for Determining In-Storage Maintenance of Items for Nuclear Facilities (NCIG-18), February 1991
P-7242	A Framework for Strategic Cost Management, October 1991
NP-6443	Improved Criteria for Snubber Functional Testing, July 1989
NSAC-121	Guidelines for Performing Safety System Functional Inspections, November 1988
NSAC-124	Comparison of Dynamic Analysis Methods for Nuclear Plant Piping, July 1988
NP-5639	Guidelines for Piping System Reconciliation (NCIG-05, Revision 1), May 1988
NP-5653-V1	Guidelines for the Content of Records to Support Nuclear Power Plant Operation, Maintenance, and Modification (NCIG-08), Volumes 1 and 2, November 1988
NP-5704-M	On-Line Vibration Monitoring for Submerged Vertical Shaft Pumps, April 1988
NP-5743	Loose-Parts Monitoring System Improvements, April 1988
NP-5184-M	Snubber Reduction Program, June 1987
NP-3834-V1	Systems Interaction Identification Procedures, Volumes 1-5, July 1985
NP-3834-V2	Systems Interaction Identification Procedures, Volumes 1-5, July 1985
NP-3834-V4	Systems Interaction Identification Procedures, Volumes 1-5, July 1985
NP-3834-V5	Systems Interaction Identification Procedures, Volumes 1-5, July 1985
NP-3950	Equipment for Removing Seized Closure Studs From Reactor Pressure Vessels, June 1985
NP-3528	Requirements and Guidelines for Evaluating Component Support Materials Under Unresolved Safety Issue A-12, June 1984
NP-3326	Correlation Between Aging and Seismic Qualification for Nuclear Plant Electrical Components, December 1983
NP-2611-V1	Main Coolant Pump Shaft Seal Reliability Investigation, Volume 1, September 1982

Environmental Qualification

Environmental Qualification Products

3002018283	A Review of Equipment Aging Theory and Technology: Revision 1 of NP-1558, July 2020
1021067	Nuclear Power Plant Equipment Qualification Reference Manual, Revision 1, September 2010
1014800	Elastomer Handbook for Nuclear Power Plants, August 2007
1009748	Guidance for Accident Function Assessment for RISC-3 Applications: Alternate Treatment to Environmental Qualification for RISC-3 Applications, October 2005
TR-109619	Guideline for the Management of Adverse Localized Equipment Environments, June 1999
TR-104873	Methodologies and Processes to Optimize EQ Replacement Intervals, February 1996
NP-4172-SP	Radiation Data for Design and Qualification of Nuclear Plant Equipment, August 1995
TR-104063	Evaluation of EQ Options and Costs for Electrical Equipment for a License Renewal Period for CCNPP, October 1994
NP-4172-M	Radiation Data for Design and Qualification of Nuclear Plant Equipment, August 1985
NP-3877	Qualification of Active Mechanical Equipment for Nuclear Plants, March 1985

Environmental Qualification Management Software

1022973	Environmental Qualification Training Modules for Engineering and Maintenance Personnel, December 2011
1003315	Environmental Qualification Management System Implementation Guide, May 2003

Environmental Qualification of Motors

3002009239	Test Report on Testing of Random-Wound Motor Insulating Systems: Intermittent Duty MOV Applications (Sub-Program A) Revision 1 to 1000867, December 2016
3002001690	Dedication and Substitution of Materials for Random-Wound Motor Rewinds Based on EPRI Environmental Qualifications, August 2013
1022971	Environmental Qualification Motor Rewind Program; Random-Wound Thermal Aging Test Results (Activation Energy), December 2011
1009747	Qualification Testing of Random-Wound Continuous-Duty Motor Insulating Systems – Sub-Program B, March 2006
1010640	Baseline Materials Data to Support Procedures for Rewinding AC Random-Wound Stators for Environmentally Qualified Motors, March 2006
1011980	Qualification of Random-Wound Continuous Duty Motor Insulating Systems for use in Nuclear Power Plants - Test 3, January 2006
1011979	Qualification of Random-Wound Continuous Duty Motor Insulating Systems: for Use In Nuclear Power Plants - Test 2, Revision 1, October 2005
1009972	Qualification of Random-Wound Continuous Duty Motor Insulating Systems: for Use in Nuclear Power Plants - Test 1, Revision 1, March 2005

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Environmental Qualification (continued)

1003480	Procedure for Rewinding AC Random-Wound Stators for Environmentally Qualified Motors: Intermittent Duty (MOV) Applications, June 2002
1001036	Test Report on Testing of Form-Wound Medium Voltage (<7kV) Motor Insulating Systems, June 2001
TR-104872	Guidelines for the Qualification of Insulation Systems for Use in Rewinding Nuclear Safety-Related Harsh Environment Motors, December 1996
TR-103585	Guidelines for the Selection, Procurement, and Acceptance of Nuclear Safety-Related Mild Environment Motor Insulation for Rewinds, September 1994

Environmental Qualification of Lubricants

1011946	Comparative Analysis of Polyrex EM and SRI Greases for Use in EQ Motor Bearings, October 2005
1009748	Guidance for Accident Function Assessment for RISC-3, October 2005
1003483	Comparative Analysis of Nebula and MOV Long Life Greases for Limitorque Main Gearbox Applications, December 2002
1003484	Comparative Analysis of Polyrex EM and SRI Greases for Use in EQ Motor Bearings—QA Report, December 2002

Environmental Qualification of Specific Components

TR-112582	High Range Radiation Monitor Cable Study: Phase II, May 2000
TR-112718	Evaluation of Neutron Irradiation Embrittlement for PWR Stainless Steel Internal Component Supports, August 1999
TR-109619	Guideline for the Management of Adverse Localized Equipment, June 1999
TR-110043	Evaluation of Environmental Fatigue Effects for a Westinghouse Nuclear Power Plant, June 1998
TR-107356	Baseline Data Program for Environmental Qualification Condition Monitoring: ASCo Solenoid Operated Valves, December 1997
TR-107356	Baseline Data Program for Environmental Qualification Condition Monitoring: ASCo Solenoid Operated Valves, December 1997
TR-105416	Qualified Life of Main Steam Isolation Valves, September 1997
TR-105151	Evaluation of Environmental Qualification Period for Conax Electrical Penetration Assemblies, September 1995

Equipment Reliability Products

3002019869	Scram Data Analysis (2015-2019), February 2021
3002019656	Plant Electrical Equipment Reliability Wiki (PEER) v1.0, June 2021
3002019354	Single Point Vulnerability Assessment Tool (SPVAT) Familiarization Video, June 2020
3002018358	Single Point Vulnerability Process Guide, Revision 1, July 2020

3002013246	Single Point Vulnerability Analysis Tool (SPVAT), v2.0, February 2020
3002002826	Causal Analysis of Loss of Offsite Power Events at U.S. Nuclear Power Plants: Summary of Experience, 2009 Through 2013, April 2014
3002002757	Equipment Reliability (ER) Matrix v1.6, March 2014
3002013805	Equipment Reliability - AP-913 Training for Engineering 1.0, March 2012
1022526	Plant Support Engineering: Generic Handbook for New System Engineers, December 2011
1024551	Equipment Reliability Site-Wide Training - Korean Release (ER Site-Wide Training - Korean Release) 1.0, December 2011
3002013802, 1022961	Equipment Reliability Site-Wide Training v1.0, December 2011
1016688	2008 Equipment Reliability Forum Proceedings, December 2008
1016692	Obsolescence Management, November 2008
1014800	Elastomer Handbook for Nuclear Power Plants, August 2007
1009749	Lubricating Oil Compatibility—ChevronTexaco GST32 (Rust and Oxidation Inhibited), February 2005
1011223	Aging Identification and Assessment Checklist—Electrical Components, January 2005
1011224	Aging Identification and Assessment Checklist—Civil and Structural Components, January 2005
1012063	Aging Assessment Field Guide - Japanese Translation, July 2006
1009615	Equipment Reliability Implementation Strategy: A Strategy for Identifying and Prioritizing Nuclear Power Plant Equipment Reliability Improvement Opportunities and Actions, April 2004
1009752	Long-Term Planning Benchmarking Results, September 2004
1009743	Aging Identification and Assessment Checklist—Mechanical Components, August 2004
1007933	Aging Assessment Field Guide, December 2003
1007935	Critical Component Identification Process—Licensee Examples: Scoping and Identification of Critical Components in Support of INPO AP-913, December 2003
1003743	Preventive Replacement: Case Studies, Draft Screening/Selection Process, December 2003
1003479	Equipment Reliability Case Studies: INPO AP-913 Equipment Reliability Process Implementation Summaries, December 2002
1003478	AP-913 Industry Capabilities Gap Analysis Results, December 2002
TR-102792-V2	Piping and Fitting Dynamic Reliability Program, November 1994
TR-102792-V3	Piping and Fitting Dynamic Reliability Program, November 1994
TR-102792-V4	Piping and Fitting Dynamic Reliability Program, November 1994

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Equipment Reliability Products (continued)

TR-102792-V5	Piping and Fitting Dynamic Reliability Program, November 1994
TR-109961	Evaluation of Combined-Cycle Combustion Turbine and PWR Nuclear Plant, March 1999
TR-102901	Fatigue Comparison of Piping Designed to ANSI B31.1 and ASME Section III, Class 1 Rules, December 1993
TR-107434	System Monitoring by System Engineers: 37 System Monitoring Plans, March 1998
TR-100844	Nuclear Power Plant Common Aging Terminology, January 1993

Flow-Accelerated Corrosion and Erosion

3002020918	PWR Secondary Side Dispersant Application Effects on Flow-Accelerated Corrosion: Evaluation of FAC Inspection Data, November 2021
3002020804	Structural Integrity Testing of Small Bore Mechanical Pipe Fittings: Tensile and Torsion Testing of Low Alloy Steel Couplings, September 2021
3002018287	Quantification of the Effects of Dissolved Oxygen on Flow Accelerated Corrosion in PWR Secondary Systems: Condensate and Feedwater, October 2020
3002015495	Flow-Accelerated Corrosion Susceptibility Level Evaluation; Assessment of Susceptibility Categorization Using Measured Wear, October 2019
3002015494	Consequence of Flow-Accelerated Corrosion Failure in Small-Bore Piping: Personnel Safety, August 2019
3002015493	Assessment of Material Alloy Analysis Technologies for Input to Flow-Accelerated Corrosion Programs, September 2019
3002015065	2018 State-of-the-Fleet Assessment of Flow-Accelerated Corrosion Program Effectiveness, March 2019
3002013312	Computer-Based Training Module: Erosion In Piping Systems, March 2018
3002013191	Self-Assessment Guidance to Support Flow-Accelerated Corrosion Programs Revision 1, May 2018
3002013184	Flow-Accelerated Corrosion in BWR Reactor Water Cleanup Systems: Effects of Intergranular Stress Corrosion Cracking Chemistry Mitigation Strategies on Carbon Steel, November 2018
3002013182	ASME Code Reconciliation for Flow-Accelerated Corrosion Programs: Process Description and Business Case, October 2018
3002013180	Alternative Materials for Balance of Plant Components Susceptible to Cavitation Erosion: Laboratory Testing of Duplex Stainless Steel, September 2018
3002012603	Erosion Degradation in Nuclear Power Plants: Assessment of Operating Experience, August 2018
3002011716	2017 State-of-the-Fleet Assessment of Flow-Accelerated Corrosion Programs, March 2018
3002010630	2016 State-of-the-Fleet Assessment of Flow-Accelerated Corrosion Program Effectiveness, June 2017

3002010594	CHECWORKS™ Steam/Feedwater Application Guidelines for Plant Modeling and Evaluation of Component Inspection Data: Revision 1, June 2017
3002010583	CHECWORKS™ Steam/Feedwater Application (SFA), Version 4.2, November 2017
3002010578	Mentoring Guide for Flow-Accelerated Corrosion Engineers: Revision 1, July 2017
3002008126	2015 State-of-the-Fleet Assessment of Flow Accelerated Corrosion Program Effectiveness, May 2016
3002008124	Field Guide: Flow-Accelerated Corrosion and Erosion, December 2016
3002008123	Phased Array Ultrasonic Wheel Probe Data for Flow-Accelerated Corrosion Evaluations: Compatibility with the CHECWORKS™ Steam/Feedwater Application, December 2016
3002008069	Flow-Accelerated Corrosion of Small-Bore Piping: Pressure Threshold Operating Experience Study, June 2016
3002008071	Flow-Accelerated Corrosion in Power Plants: Revision 2, September 2016
3002005208	Flow-Accelerated Corrosion Nondestructive Evaluation Reference Guide, December 2015
3002005668	CHECWORKS Steam/Feedwater Application (SFA) Version 4.1, November 2015
3002005530	Recommendations for an Effective Program Against Erosive Attack, July 2015
3002005488	Five-Year Summary for State-of-the-Fleet Assessments of Flow-Accelerated Corrosion Program Effectiveness, May 2015
3002005487	2014 State-of-the-Fleet Assessment of Flow Accelerated Corrosion Program Effectiveness, April 2015
3002004401	Development of Ultrasonic Phased Array Technology for Corrosion, December 2014
3002003118	Flow-Accelerated Corrosion Material Form Effect: Phase II Investigations, December 2014
3002003086	Review of the Geometry Factors in the CHECWORKS 4.0 Steam Feedwater Application, September 2014
3002003059	2013 State-of-the-Fleet Assessment of Flow-Accelerated Corrosion Program Effectiveness, May 2014
3002000540	Training Module: Erosion Analysis In CHECWORKS, Version 4.0, April 2013
3002000564	Training Module: Flow Accelerated Corrosion (FAC) for Supervisors and Managers, May 2013
3002000563	Recommendations for an Effective Flow-Accelerated Corrosion Program (NSAC-2021-R4), November 2013
3002000558	2012 State-of-the-Fleet Assessment of Flow-Accelerated Corrosion Program Effectiveness, May 2013
3002002216	CHECWORKS Steam Feedwater Application (SFA) 4.0 SP-1, November 2013
1025273	Flow Accelerated Corrosion Material Form Effect, December 2012
1025274	Demonstration of New Multiple Inspection Evaluation Methods, May 2012
1024869	2011 State-of-the-Fleet Assessment of Flow-Accelerated Corrosion Program Effectiveness, March 2012

PE Products List

Flow-Accelerated Corrosion and Erosion (continued)

1022982	Impact of Electric Power Upgrades on Flow Accelerated Corrosion, December 2011
1022607	2010 State of the Fleet Assessment of Flow-Accelerated Corrosion Program Effectiveness, December 2011
1022575	Implementation of Test Project on Total Points Method, December 2011
1022189	Computational Fluid Dynamics Study of the Entrance Effect, December 2011
1023189	Fiber Bragg Grating Monitoring of Flow-Accelerated Corrosion, December 2011
1022187	Plant Susceptibility Screening for Erosive Attack, November 2010
1020528	Development of an Averaged Point-to-Point Method for Inspection Data, May 2010
1020527	Evaluation of Multiple-Inspection Flow-Accelerated Corrosion Data on Unequal Grids, April 2010
1020886	Program on Technology Innovation: Mitigation of Flow-Accelerated Corrosion by Titanium Injection in PWR Secondary Systems, March 2010
1019177	State-of-the-Fleet Project to Assess Flow-Accelerated Corrosion Program Effectiveness, December 2009
1019175	Statistical Methods for the Analysis of Multiple-Inspection Flow-Accelerated Corrosion Data, November 2009
1018468	Effect of Pipe Size on CHECWORKS SFA Geometry Factors, January 2009
1018467	Application of the New ASME Design Margin to the Assessment of FAC-Induced Wall Thinning in Piping Systems, January 2009
1018466	Optimization of FAC Inspections: BWR Feedwater Systems, December 2008
1018456	Least Squares Methods for Evaluating Inspection Data, December 2008
1015072	Flow-Accelerated Corrosion: The Entrance Effect, November 2007
1015170	Investigation into Flow-Accelerated Corrosion at Low Temperatures, November 2007
3002013311*, 1013249	Computer-Based Training Module on Flow-Accelerated Corrosion (FAC) for Non-FAC Personnel, May 2006
1013013	An Evaluation of Flow-Accelerated Corrosion in the Bottom Head Drains of BWRs, March 2006
1013012	Determining Wear from Single-Outage Inspection Data, March 2006
1011825	On-Line Flow-Accelerated Corrosion Assessment of Large Diameter Piping Through Insulation with Radiographic Techniques, December 2005
1011835	Chemistry Effects of Flow-Accelerated Corrosion, PWR: Hydrazine and Oxygen Investigations, November 2005
1011833	Chemistry Effects on Flow-Accelerated Corrosion; BWR Dissolved Oxygen, November 2005
1009594	On-Line Flow-Accelerated Corrosion Assessment of Large-Diameter Piping Through Insulation with Radiographic Techniques, December 2004

1008047	Flow-Accelerated Corrosion Investigations of Trace Chromium, December 2003
1007772	Investigations into Preferential Attack of Welds in Carbon Steel Piping and Vessels, December 2003
1007057	Selective Attack of Welds by Flow-Accelerated Corrosion, July 2002

Heat Exchanger Products

3002020824	Main Condenser Integrity Assessment Guide, October 2021
3002018341	Guideline for Procurement of Replacement Stainless Steel Heat Exchanger Tubing, November 2020
3002018339	Guidance for Performing Effective Destructive Examinations of Heat Exchanger Tubing, July 2020
3002018338	Evaluation of Condenser Cleanliness Techniques for Thermal Performance Recovery and Tubing Integrity, October 2020
3002016954	Evaluating Alternative Materials for Plugging Small Tube Leaks in Condensers, September 2019
3002015785	Assessment of Electromagnetic Methods for Nonferromagnetic Tubes with External Fins: Array Coil Technology for Inspecting Hydrogen and Motor Cooler Tubes with External Fins, June 2019
3002010691	Comprehensive Shell and Tube Heat Exchanger Resource, June 2017
3002008014	Plant Support Engineering: Chiller Replacement Guideline for Nuclear Power Plants, December 2016
3002008015	Comprehensive Tube Plugging Guidelines, October 2016
3002008016	Comprehensive Heat Exchanger Leak Troubleshooting Guide, November 2016
3002005336	Laboratory Evaluation of Techniques for Detecting Small Condenser Tube Leaks, September 2015
3002005338	Comprehensive Condenser Resource, August 2015
3002005340	Service Water Heat Exchanger Testing Guidelines, May 2015
3002005337	Classical Heat Exchanger Analysis, May 2015
3002005341	Heat Exchanger layup/Standby and Out-of-Service Periods for Open Cooling Water Service, May 2015
3002000542	Guidance for Replacing Shell-and-Tube Heat Exchangers at Nuclear Power Plants, March 2014
3002002306	Evaluation of Techniques for Detecting Small Condenser Tube Leaks, January 2014
3002000544	Heat Exchanger Tube Plugging Calculator, November 2013
1025271	Heat Exchanger Visual Inspection - Partial Tube Blockage Considerations, November 2012
1022980	Guidance for an Effective Heat Exchanger Program, December 2011
1014882	Temperature Stability Criteria for Heat Exchanger Testing, December 2007

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Heat Exchanger Products (continued)

1012129	Heat Exchanger Thermal Performance Margin Guidelines, November 2005
1009839	Heat Exchanger Single Tube Test Device, December 2004
1007248	Alternative to Thermal Performance Testing and/or Tube Side Inspections of Air-To-Water Heat Exchangers, November 2002

High-Density Polyethylene (HDPE) for Plant Piping

3002014505	Slow Crack Growth from Planar Flaws in High Density Polyethylene Coupon Butt Fusion Joints Under Axial Loading, September 2020
3002003089	Pennsylvania Edge Notched Tensile Resistance of High Density Polyethylene Butt Fusion Joints, August 2016
3002013027	Advanced Nuclear Technology: Guidance on the Application of High-Density Polyethylene Piping, June 2018
3002005333	Sustained Pressure Test Results for Surface Scratches in PE4710, Cell Classification 445574C High Density Polyethylene Pipe Material, August 2016
3002000592	Creep and Fatigue Properties of PE 4710 Cell Classification 445574C High Density Polyethylene Pipe Material, November 2013
3002000598	An Assessment of Industry Data Related to Essential Variables for Fusing High Density Polyethylene Pipe, July 2013
1025254	Tensile Stress-Strain Properties and Elastic Modulus of PE 4710 Cell Classification 445574C High Density Polyethylene Pipe Material, December 2012
1025253	Development of Crack Growth Curves and Correlation to Sustained Pressure Test Results for Cell Classification 445574C High-Density Polyethylene Pipe Material, September 2012
1022565	Slow Crack Growth Testing of High Density Polyethylene Pipe - 2011 Update, August 2011
1020439	Stress Intensification and Flexibility Factors of High Density Polyethylene Pipe Fittings, NQA Report, October 2010
1020438	Capacity Testing of High-Density Polyethylene Bolted Flanged Joints, March 2010
1018351	Tensile Testing of Cell Classification 445474C High-Density Polyethylene Pipe Material, December 2008
1016719	Fatigue Testing of HDPE Pipe and Pipe Components Fabricated from PE 4710 - 2008 Update, December 2008
1018351	Tensile Testing of Cell Classification 445474C High Density Polyethylene Pipe Material, December 2008
1015062	Fatigue and Capacity Testing of High-Density Polyethylene Pipe and Pipe Components Fabricated from E 4710, December 2007
1014902	Fatigue and Capacity Testing of High-Density Polyethylene Pipe Material, April 2007
1011836	Design and Qualification of High-Density Polyethylene for ASME Safety Class 3 Piping Applications, December 2005

License Renewal

License Renewal Tools

3002016097	Guideline for Assessing Sprinklers Used in Nuclear Power Plants: Fire Sprinkler Head Testing, June 2020
1015078	Aging Effects for Structures and Structural Components (Structural Tools), December 2007
1013475	License Renewal Electrical Handbook (Revision 1 to 1003057), February 2006
1010639	Non-Class 1 Mechanical Implementation Guideline and Mechanical Tools, Revision 4, January 2005
1007931	Life Cycle Management Economic Tools Demonstration: Risk-Informed Long-Term Planning for Equipment, March 2004
1002950	Aging Effects for Structures and Structural Components (Structural Tools), Revision 1, August 2003
1003458	License Renewal Electrical Template, July 2002
1000866	Summary of Generic License Renewal Technical Issues: Revision 1, June 2001
1003058	Life Cycle Management Planning Sourcebooks—Overview Report, December 2001
1000174	Oconee Electrical Component Integrated Plant Assessment and Time Limited Aging Analyses for License Renewal: Revision 1, August 2000
TR-112233	Polymer Specimen Removal Techniques for In-Service Cables, February 2000
TR-112582	High Range Radiation Monitor Cable Study: Phase II, May 2000
TR-114881	Aging Effects for Structures and Structural Components (Structural Tools): B&W Owners Group Generic License Renewal Program, BAW-2279P, 1997, April 2000
TR-110379	High Range Radiation Monitor Cable Study: Phase I, November 1998
TR-107943	Environmental Fatigue Evaluations of Representative BWR Components, August 1998
TR-107386-V2	Evaluation of the Effect of LOCA Testing on Polyimide Insulated Wire Subjected to Bending: Volume 2, May 1998
TR-110356	Evaluation of Environmental Thermal Fatigue Effects on Selected Components in a BWR Plant, May 1998
TR-106106	Demonstration of the Management of Aging Effects for B&W Pressurizers, February 1998
TR-106931	Demonstration of the Management of Aging Effects for the Reactor Coolant System Piping, May 1997
TR-106370	Reduction of Oxidation Induction Time Testing to Practice as a Life Assessment Technique for Cable Insulation, March 1996
TR-104075	Evaluation of Cable Polymer Aging Through Indenter Testing of In- Plant and Laboratory-Aged Specimens, January 1996

PE Products List

License Renewal (continued)

TR-105135	Aging Management Evaluation of the Residual Heat Removal System for Westinghouse PWRs, October 1995
TR-105272	Aging Management Evaluation of Reactor Coolant System Supports for Westinghouse PWRs, September 1995
NP-4926	Review of Records Requirements Related to LWR Life Extension, November 1986
NP-5001	Characterization of the Performance of Major LWR Components, December 1986

License Renewal Implementation

1016236	Flaw Tolerance Evaluation of Thermally Aged Cast Austenitic Stainless Steel Piping, December 2007
1015395	Utility Cast Austenitic Stainless Steel Component Aging Management Inspection Needs, December 2007
1015392	Utility Selective Leaching One-Time Inspection Needs, December 2007
1014751	License Renewal Commitment Implementation Guide, January 2007
1013477	Nuclear Plant License Renewal Commitments, November 2006
1011879	License Renewal Commitment Review, December 2005
1000976	Evaluation of Thermal Aging Embrittlement for Cast Austenitic Stainless Steel Components, December 2000
TR-104063	Evaluation of Environmental Qualification Options and Costs for Electrical Equipment for a License Renewal Period for Calvert Cliffs Nuclear Power Plant, November 1994

License Renewal Aging Management Guides

3002020623	2021 Leveraging Risk Insights for Aging Management Program Implementation Update, April 20210
3002018401	2020 Update to EPRI Product Mapping to International Atomic Energy Agency (IAEA) International Generic Ageing Lessons Learned (IGALL) Aging Management Program Categories, June 2020
3002018285	Results of Accelerated Aging for Sprinklers Used in Nuclear Power Plants: Fire Sprinkler Head Testing, November 2020
3002017865	Leveraging Risk Insights to Optimize Aging Management Program Implementation: A Selective Leaching Task Force Project, January 2020
3002010401	Long-Term Operations: Subsequent License Renewal Electrical Handbook, April 2018
3002007992	Plant Engineering: Electrical Penetration Aging Management Guide Update, December 2016
1022972	Control Relay Aging Management Guideline, December 2011
TR-105135	Aging Management Evaluation of the Residual Heat Removal System for Westinghouse PWRs, October 1995
TR-105272	Aging Management Evaluation of Reactor Coolant System Supports for Westinghouse PWRs, September 1995

TR-103835	PWR Containment Structures License Renewal Industry Report—Revision 1, July 1994
TR-103836	BWR Reactor Pressure Vessel License Renewal Industry Report—Revision 1, July 1994
TR-103837	PWR Reactor Pressure Vessel License Renewal Industry Report—Revision 1, July 1994
TR-103838	PWR Reactor Pressure Vessel Internals License Renewal Industry Report—Revision 1, July 1994
TR-103839	BWR Reactor Pressure Vessel Internals License Renewal Industry Report—Revision 1, July 1994
TR-103840	BWR Containments License Renewal Industry Report—Revision 1, July 1994
TR-103841	Low-Voltage Environmentally-Qualified Cable License Renewal Industry Report—Revision 1, July 1994
TR-103842	Class 1 Structures License Renewal Industry Report—Revision 1, July 1994
TR-103843	BWR Primary Coolant Pressure Boundary License Renewal Industry Report—Revision 1, July 1994
TR-103844	PWR Reactor Coolant System License Renewal Industry, July 1994
TR-100844	Nuclear Power Plant Common Aging Terminology, November 1992

Life Cycle Management Products

LCM Program

3002019543	Long-Term Asset Management Basis Design Application (LAMBDA), December 2020
3002011668	Integrated Life Cycle Management (ILCM) Early Adopter Pilot Studies: Using Technology to Increase Effectiveness and Reduce Costs, November 2017
3002008006	Likelihood of Replacement Calculator to Support the Integrated Life Cycle Management Program, October 2016
3002008005	Integrated Life Cycle Management: Revision 1, December 2016
3002007455	Investments Portfolio Optimal Planning Technical Manual, May 2016
1025260	Users Guide for the Development of Life Cycle Management Plans, December 2012
1007385	Project Ranking Method for Nuclear Power Plants: Prioritizing Proposed Capital and O&M Projects, May 2003
1006999	LifeCycle Management Plan for Circuit Breakers at Salem and Hope Creek Stations, March 2003
1007000	Life Cycle Management Plan for Control Air System and Station Air Compressors at Salem Station, March 2003
1007023	Life Cycle Management Plan for Main Generator and Exciter at South Texas Project, March 2003
1002954	Guide for Predicting Long-Term Reliability of Nuclear Power Plant Systems, Structures, and Components, December 2002
TR-110089	Experience Based Interview Process for Power Plant Management: With a Pilot Application to Aging of Outage Support Equipment, February 1999

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Life Cycle Management Products (continued)

Sourcebooks

1015075	Life Cycle Management Planning Sourcebooks – Chillers, December 2007
1016686	Life Cycle Management Planning Sourcebooks – Fire Protection System, December 2008
1010031	Life Cycle Management Planning Sourcebook: Medium Voltage Switchgear, March 2006
1013187	Life Cycle Management Planning Sourcebooks: Medium Voltage (MV) Cables and Accessories (Terminations and Splices), November 2006
1008282	Life Cycle Management Sourcebook for Nuclear Plant Service Water Systems, March 2005
1006616	Life Cycle Management Planning Sourcebooks—Volume 2: Buried Large Diameter Piping, May 2002
1003651	Life Cycle Management Planning Sourcebooks—Volume 3: Main Condenser, March 2003
1007422	Life Cycle Management Planning Sourcebooks—Volume 4: Large Power Transformers, March 2003
1007423	Life Cycle Management Planning Sourcebooks—Volume 5: Main Generator, July 2003
1007425	Life Cycle Management Planning Sourcebooks—Volume 6: Feedwater Heater Controls, February 2003
1007426	Life Cycle Management Planning Sourcebooks—Volume 7: Low-Voltage Electrical Distribution Systems, February 2003
1009071	ICM Planning Sourcebooks—Volume 8: Main Turbine, January 2004
1009072	ICM Planning Sourcebooks—Volume 9: Main Turbine Electro-Hydraulic Controls, December 2003
1009073	ICM Planning Sourcebooks—Volume 10: Feedwater Heaters, December 2003
1006609	Life Cycle Management Planning Sourcebooks—Volume 1: Instrument Air System, December 2001

End of Life Guidance

3002000568	Plant Engineering: Emergency Diesel Generator Excitation System End of Expected Life Guidance, December 2013
3002002999	Plant Engineering: Emergency Diesel Generator Turbocharger End-of-Expected-Life Guidance, June 2016
3002000562	Plant Engineering: Motor Control Center End of Expected Life Guidance, December 2013
1025259	Medium Voltage Cables and Accessories End of Expected Life Guide, October 2012
1025261	Medium Voltage Transformers End of Expected Life Guide, December 2012
1022970	Large Horizontal Pump End of Expected Life Report, December 2011
1022966	Instrument Power Supply End of Expected Life Guidance, June 2011
1021066	Feedwater Pump Turbine Mechanical Hydraulic Controls End-of-Life Report, December 2010

1019154	Large Vertical Pump End-of-Expected-Life Report, December 2009
1016687	Buried Pipe End-of-Expected-Life Considerations and the Need for Planning, December 2008
1016684	Switchyard Component End of Expected Life Considerations and the Need for Planning, December 2008
1013566	Large Transformer End of Expected Life and Planning Considerations, December 2006
TR-104829	Effect of Nuclear Power Plant Decommissioning Costs on Plant Life Cycle Decisions, July 1995

Component Replacement Guides

3002015736	Guideline for the Development of a Risk and Health Indicator Tool for Nuclear Power Plant Interconnection Equipment, November 2019
1020625	Guidance for the Replacement of Large Electric Motors at Nuclear Power Plants, March 2010
1016685	Guidance for Replacing Inverters and Battery Chargers at Nuclear Power Plants, October 2008
1015077	Guidance for Planned Replacement of Large Power Transformers at Nuclear Power Plants, November 2007
1014826	Guidance for Replacing Feedwater Heaters at Nuclear Power Plants, July 2007
1013470	Guidance for Replacing Heat Exchangers at Nuclear Power Plants with Plate Heat Exchangers, July 2006
NP-5461	Component Life Estimation: LWR Structural Materials Degradation Mechanisms, October 1987
NP-3673-LD	Long-Term Integrity of Nuclear Power Plant Components, June 1984

Implementation Plans

3002020623	2021 Leveraging Risk Insights for Aging Management Program Implementation Update, April 2021
1007960	Main Generator and Exciter Life Cycle Management Plans at STARS Nuclear Plants: Generic Version, CD-ROM, September 2003
1009152	Life Cycle Management Plan for Feedwater Heater and Moisture Separator Controls at Hope Creek Generating Station: Generic Version, September 2003
1009153	Life Cycle Management Plan for Circuit Breakers at Salem and Hope Creek Stations: Generic Version, September 2003
1009155	Life Cycle Management Plans for Hope Creek and Salem: Feedwater Heater and Moisture Separator Controls, Circuit Breakers, and Station Air System, September 2003
1009156	Life Cycle Management Plan for Main Generator and Exciter at Wolf Creek Generating Station: Generic Version, September 2003
1009157	Life Cycle Management Plan for Main Generator and Exciter at Callaway Nuclear Plant: Generic Version, September 2003

PE Products List

Life Cycle Management Products (continued)

1009158	Life Cycle Management Plan for Main Generator and Exciter at Palo Verde Nuclear Generating Station: Generic Version, September 2003
1009159	Life Cycle Management Plan for Main Generator and Exciter at South Texas Project: Generic Version, September 2003
1009160	Life Cycle Management Plan for Main Generator and Exciter at Diablo Canyon Power Plant: Generic Version, September 2003
1009161	Life Cycle Management Plan for Main Generator and Exciter at Comanche Peak Steam Electric Station: Generic Version, September 2003
1003059	Life Cycle Management Planning at V. C. Summer Nuclear Plant: Main Condenser, Radiation Monitoring System, and Nuclear Safety-Related HVAC Chilled Water, December 2001
1003060	Life Cycle Management Planning at Wolf Creek Generating Station: EDG, Main Steam and Feedwater Isolation Valves, and Reactor Protection System, December 2001
1000806	Demonstration of Life Cycle Management Planning for Systems, Structures, and Components: With Pilot Applications at Oconee and Prairie Island Nuclear Stations, February 2001
TR-105420-V1	Calvert Cliffs Nuclear Power Plant Life Cycle Management/License Renewal Program: Structure Scoping and Aging Management Review: Volumes 1–3, February 1996
TR-104732	Calvert Cliffs Nuclear Power Plant Life Cycle Management/License Renewal Program, November 1995
TR-104615	Calvert Cliffs Nuclear Power Plant Life Cycle Management/License Renewal Program: Nuclear Plant Asset Management Case Study, June 1995
TR-104509	Calvert Cliffs Nuclear Power Plant Life Cycle Management/License Renewal Program: Reactor Pressure Vessel Evaluation, June 1995
TR-104777	Calvert Cliffs Nuclear Power Plant Life Cycle Management/License Renewal Program: Containment System Component Evaluation and Program Evaluation, April 1995
TR-103158	Calvert Cliffs Nuclear Power Plant Life Cycle Management/License Renewal Program: System, Structure, and Component Screening, November 1994
TR-102204	Service (Salt) Water System Life Cycle Management Evaluation, May 1993

Motors

3002020839	Shipping and Storage of Electric Motors: Revision of 1009698, November 2021
3002020838	Model Repair and Reconditioning Specification for DC Motors—DC Repair Spec: Revision of 1009676, November 2021
3002018286	Electric Motor Microelectromechanical Systems (MEMS): Sensors for the Detection of Internal Stressors, November 2020

3002016077	Medium-Voltage Motor and Cable, Very-Low-Frequency (VLF) Tan Delta Testing from the Cable Termination: VLF Motor and Cable Testing November 2019
3002016079	Evaluation of Preventive Maintenance Effectiveness for Electric Motors, November 2019
3002013161	Field Guide for Very Low Frequency Tan Delta Testing of Medium-Voltage Motors and Cables from the Cable
3002010688	Operating Guidance for Induction Motors During Unbalanced Voltage Conditions: Unbalanced Voltage Report, December 2017
3002010686	Guide for the Specification of Replacement and Spare AC Squirrel-Cage Motors Having Voltage Ratings Up to 600 Volts: Revision of 3002000809, October 2017
3002009239	Test Report on Testing of Random-Wound Motor Insulating Systems: Intermittent Duty MOV Applications (Sub-Program A) Revision 1 to 1000867, December 2016
3002000527	Plant Engineering: Critical Motor Refurbishment and Procurement Checklist - Key Project Phases and Considerations, June 2013
3002001690	Dedication and Substitution of Materials for Random-Wound Motor Rewinds Based on EPRI Environmental Qualifications, August 2013
1022971	Environmental Qualification Motor Rewind Program; Random-Wound Thermal Aging Test Results (Activation Energy), December 2011
1020625	Plant Support Engineering: Guidance for the Replacement of Large Electric Motors at Nuclear Power Plants, March 2010
1009747	Qualification Testing of Random-Wound Continuous-Duty Motor Insulating Systems – Sub-Program B, March 2006
1010640	Baseline Materials Data to Support Procedures for Rewinding AC Random-Wound Stators for Environmentally Qualified Motors, March 2006
1011980	Qualification of Random-Wound Continuous Duty Motor Insulating Systems for use in Nuclear Power Plants - Test 3, January 2006
1011979	Qualification of Random-Wound Continuous Duty Motor Insulating Systems: for Use In Nuclear Power Plants - Test 2, Revision 1, October 2005
1009972	Qualification of Random-Wound Continuous Duty Motor Insulating Systems: for Use in Nuclear Power Plants - Test 1, Revision 1, March 2005
1003480	Procedure for Rewinding AC Random-Wound Stators for Environmentally Qualified Motors: Intermittent Duty (MOV) Applications, June 2002
1001036	Test Report on Testing of Form-Wound Medium Voltage (<7kV) Motor Insulating Systems, June 2001
TR-104872	Guidelines for the Qualification of Insulation Systems for Use in Rewinding Nuclear Safety-Related Harsh Environment Motors, January 1997
TR-103585	Guidelines for the Selection, Procurement, and Acceptance of Nuclear Safety-Related Mild Environment Motor Insulation for Rewinds, September 1994
NP-6407	Guidelines for the Repair of Nuclear Power Plant Safety-Related Motors (NCIG-12), April 1990

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Nuclear Coatings Products

3002020819	Assessment of Ultraviolet Curable Coatings for Immersion Service-Phase 2, November 2021
3002018350	Assessment of Ultraviolet Curable Coatings for Immersion Service, July 2020
3002013203	State-of-the-Art Coatings for Balance-of-Plant Applications: A Literature Review and Technology Readiness Assessment, May 2018
3002010648	Polymeric Materials Database for Nuclear Power Plants (PMDNPP), version 1.0, December 2017
3002008011	Aging Study of Buried Pipe Coatings, July 2016
3002005332	Program on Technology Innovation: Polymers in Nuclear Power Plants, Current Status and Prospects for Expansion, December 2015
3002005330	Experimental Testing of Coatings to Determine Ability to Accelerate Coating Repairs for Immersion Application, November 2015
3002005223	Survey for Service Life and Failure History of Immersion Coatings, September 2015
3002000629	Aging Degradation of Coating Service Level I Coatings—Summary of EPRI Coating Aging Project Activities, June 2013
1024604	Coatings Option Database Version 2.0, July 2012
1025323	Field Guide: Coatings Assessment, May 2012
1019157	Guideline on Nuclear Safety-Related Coatings, Revision 2, December 2009
1014884	Degradation Research for Nuclear Service Level 1 Coatings, September 2007
1014883	Adhesion Testing of Nuclear Service Level 1 Coatings, August 2007
1013465	Aging and Degradation Survey for Nuclear Service Level 1 Coatings, December 2006
1011753	Design Basis Accident Testing of PWR Unqualified Original Equipment Manufacturer Coatings, September 2005
1009750	Analysis of PWR Unqualified Original Equipment Manufacturer Coatings, March 2005
TR-106160	Coatings Handbook for Nuclear Power Plants, June 1996

Plant Thermal Performance Products

3002020824	Main Condenser Integrity Assessment Guide, October 2021
3002020803	Thermal Performance Troubleshooting Software (EPRIVOL3) v1.0, May 2021
3002018338	Evaluation of Condenser Cleanliness Techniques for Thermal Performance Recovery and Tubing Integrity, October 2020
3002018337	Use of Data Validation and Reconciliation Methods for Measurement Uncertainty Recapture: Topical Report, November 2020

3002015922	Methods for Developing Decision-Making Software for Cost-Effectively Managing Balance-of-Plant Components in Nuclear Power Plants, November 2019
3002013197	Guidance for Implementing a Data Validation and Reconciliation Program at Nuclear Power Plants, November 2018
3002013194	Data Validation Techniques: Effects of Polyacrylic Acid and Online Noble Metal Injections on Steam Side Parameters, July 2018
3002008017	Thermal Performance Modeling Best Practices, July 2016
3002005344	Turbine Cycle Equipment Evaluation (TCEE) Workbook Version 1.0, November 2015
3002005343	Thermal Performance Program Assessment Guideline, October 2015
3002005345	Program on Technology Innovation: Evaluation of Data Reconciliation Methods for Power Recovery, July 2015
3002005346	Thermal Performance Engineering Handbook, Volume 3, May 2015
3002000560	Plant Engineering: Thermal Performance Engineers Handbook, Volume 1: Supersedes TR-107422-V1, December 2013
3002000489	Plant Engineering: Thermal Performance Engineering Handbook, Volume 2: Supersedes TR-107422-V2, May 2013
1025264	Plant Engineering: Heat Cycle Isolation Valve Leakage Identification and Quantification, December 2012
1024832	Plant Engineering: Performance Diagnostic Test Program for the Nuclear Turbine Cycle at Korea Hydro and Nuclear Power Company, February 2012
1022967	Predicting Nuclear Plant Output from Performance Losses and Gains, December 2011
1021068	Evaluating Equipment Performance Guarantees, December 2010
1019155	Methodologies for Monitoring and Adjusting Reactor Power Measurement Drift - Phase 2, September, 2009
1019583	Compilation of Results and Feedback Regarding Feedwater Heater Replacements at Fossil and Nuclear Power Plants, August 2009
1014875	Methodologies for Monitoring and Adjustment of Reactor Power Measurement Drift, September 2007
1000607	Small Power Uprates Under Appendix K, November 2000
TR-112819	Condenser In-Leakage Guideline, January 2000
TR-106345	Moisture Separator Reheater Source Book, November 1997
Library	P2EP Technical Library (access by logging on to https://p2ep.epri.com/)

PE Products List

Procurement Engineering and Supply Chain Products

3002020837	Determining Configurability and Consequences of Error of Digital Devices, November 2021
3002020836	Inter-Utility Transfer of Safety-Related Items: Revision 1 to EPRI TR-102544-3002020836, October 2021
3002020811	Technical and Quality Requirements CBT
3002020810	Procurement Engineering Safety Classification On-Demand Training
3002020809	Prevention and Detection of Undeclared Digital Content CBT
3002020796	Remote Assessment Techniques: Planning and Conducting Audits and Surveys Using Remote Techniques During Exigent Conditions, April 2021
3002016180	Technical Evaluation Data (TED) v0.0, December 2020
3002018354	EPRI Procurement Information Center Wiki (EPIC), November 2020
3002018341	Guideline for Procurement of Replacement Stainless Steel Heat Exchanger Tubing, November 2020
3002018278	Item Equivalency Evaluation Computer-Based Training, November 2020
3002018279	Digital Equivalency Evaluation: Screening Checklist and Considerations, Revision 1-An Updated Approach That Considers Item Configurability and Consequences of Error, September 2020
3002019436-A	Remote Source Verification During a Pandemic or Similar State of Emergency: Screening Criteria and Process Guidance, April 2020
3002015921	Commercial Grade Item Dedication Computer-Based Training, November 2019
3002011817	Safety Integrity Level (SIL) Certification Efficacy for Nuclear Power, July 2019
3002013801	Quality Control Receipt Inspection – Computer Based Training, March 2018
3002011678	Guidance for the Use of Reverse-Engineering Techniques: Revision 1 to EPRI TR-107372, May 2018
3002010685	Critical Spares: Program Implementation and Lessons Learned, November 2017
3002008010	Guideline on Prevention and Detection of Undeclared Digital Content, November 2016
3002015960	Counterfeit, Fraudulent, and Suspect Items CBT (CFI), Version 2.0, October 2016
3002007023	Digital Equivalency Evaluation: Screening Checklist and Considerations, December 2015
3002015989	Technical Specialist Training (TST) for Audits and Surveys Version 2.1 (bug fix), November 2015
3002015958	Procurement Engineering Fundamentals (PEF) v1.0, October 2015
3002006066	Typical Format for Documenting Commercial-Grade Item Dedication Technical Evaluations, August 2015
3002005396	Plant Engineering: Relay Procurement and Acceptance, Checklist and Considerations, June 2015

3002002982	Plant Engineering: Guideline for the Acceptance of Commercial-Grade Items in Nuclear Safety-Related Applications: Revision 1 to EPRI NP-5652 and TR-102260, September 2014
3002013813	Obsolescence Program Manager Computer Based Training (CBT) v1.0, September 2014
3002002276	Plant Support Engineering: Counterfeit and Fraudulent Items—Mitigating the Increasing Risk, Revision 1 of 1019163, July 2014
3002002289	Plant Engineering: Guideline for the Acceptance of Commercial-Grade Design and Analysis Computer Programs Used in Nuclear Safety-Related Applications: Revision 1 of 1025243, December 2013
3002000527	Plant Engineering: Critical Motor Refurbishment and Procurement Checklist - Key Project Phases and Considerations, June 2013
1022960	Critical Pump Refurbishment and Procurement, December 2011
1022959	Guidelines for Establishing, Maintaining, and Extending the Shelf Life Capability of Limited Life Items, December 2011
1021493	Counterfeit and Fraudulent Items, A Self-Assessment Checklist, October 2010
1019162	Critical Spare Parts Program Development, December 2009
1019161	Proactive Obsolescence Management, Program Implementation and Lessons Learned, December 2009
3002013790	Nuclear Supply Chain Training - Warehouse Inventory Management v1.0, December 2009
1016692	Obsolescence Management, November 2008
1016695	Replacements for Obsolete ASCO Red Hat Series Solenoid Valves, Generic Equivalency Evaluations for ASCO 8262 and 8345 Series Valves, August 2008
1016693	Plant Support Engineering: Guidance for Managing the Impact of Procured Item Quality Issues on Generating Asset Economic Performance, July 2008
1016157	Information for Use in Conducting Audits of Supplier Commercial Grade Item Dedication Programs, June 2008
1015079	Plant Support Engineering: Replacements for Obsolete ASCO Red Hat Series Solenoid Valves - NQA Safety Related, December 2007
1015171	Procured Item Quality Initiative, Initial Findings, November 2007
1011860	Replacements for Obsolete ASCO Red Hat Series Solenoid Valves, December 2005
1008256	Guidelines for the Technical Evaluation of Replacement Items in Nuclear Power Plants: Revision 1, June 2006
1008258	An Overview of Other Industry Experience with the ISO 9000 Quality Management System, January 2004
1002976	An In-Depth Review of Licensee Procurement Options for Use with ISO 9000 Suppliers, December 2003
1007937	Analysis and Comparison of ANSI/ISO/ASQ Q9001: 2000 with 10CFR50, Appendix B: ISO 9000 Gap Analysis, December 2003

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Procurement Engineering and Supply Chain Products (continued)

1008034	JUTG Commercial Grade Item Technical Evaluations, May 2003
1003105	Dedicating Commercial Grade Items Procured from ISO 9000 Suppliers, December 2001
TR-112579	Critical Characteristics for Acceptance of Seismically Sensitive Items (CCASSI), September 2000
TR-017218-R1	Guideline for Sampling in the Commercial-Grade Item Acceptance Process, February 1999
TR-109648	Inventory Optimization in Support of the EPRI Work Control Process Module, October 1998
TR-107101	Packaging, Shipping, Storage, and Handling Guidelines for Nuclear Power Plants, February 1997
TR-103585	Guidelines for the Selection, Procurement, and Acceptance of Nuclear Safety-Related Mild Environment Motor Insulation for Rewinds, September 1994
TR-102544	Issues Related to the Inter-Utility Transfer of Material, November 1993
TR-101752	Guideline for Using Items Manufactured to Other Industry Standards in Nuclear Safety-Related Applications, March 1993
NP-7399	Guide for Monitoring Equipment Environments During Nuclear Plant Operation, August 1991
NP-6896	Guidelines for Determining In-Storage Maintenance of Items for Nuclear Facilities (NCIG-18), February 1991
NP-6630	Guidelines for Performance-Based Supplier Audits (NCIG-16), June 1990
NP-6629	Guidelines for the Procurement and Receipt of Items for Nuclear Power Plants (NCIG-15), May 1990
NP-6200	A Performance-Based Selective Inspection Process (NCIG-09), December 1988
NP-5653-V2	Guidelines for the Content of Records to Support Nuclear Power Plant Operation, Maintenance, and Modification (NCIG-08), Volumes 1 and 2, November 1988
NP-5638	Guidelines for Preparing Specifications for Nuclear Power Plants (NCIG-04), April 1988
NP-5640-V1	Nuclear Plant Modification and Design Control: Guidelines for Generic Problem Prevention (NCIG-06), Volumes 1 and 2, March 1988
NP-5640-V2	Nuclear Plant Modification and Design Control: Guidelines for Generic Problem Prevention (NCIG-06), Volumes 1 and 2, March 1988

Relays

3002016160	Relay Forensic Aging Analysis, November 2019
3002013163	Evaluation of Nuclear Power Plant Degraded Voltage Protection: A Review of Regulatory Guidance and Industry Operating Experience, December 2018
3002010689	Plant Engineering: Relay Failure Analysis—Understanding the Causes of Relay Failures, December 2017
3002008000	Application Review of Degraded Grid Relays at Nuclear Power Plants: EPRI Survey on Degraded Grid Relays at Nuclear Power Plants, December 2016

3002004173	Relay Service Life Testing and Evaluation—Agastat EGP Relays, June 2014
3002000541	Relay Series - Specific Guidance: Generic Service Life Analyses (GSLA) and Preventive Maintenance (PM) Templates, July 2013

Seismic Qualification Products

3002011475	SQURTS Program Database, version 2.5, October 2017
1016694	Generic Seismic Technical Evaluations of Replacement Items for Nuclear Power Plants Item-Specific Evaluations - TR-105849 Rev. 1, September 2008
1016691	Periodic Review of G-STERI Evaluations, September 2008
3002013821	Seismic Orientation Training Course Software, Version 11/2002
TR-112579	Critical Characteristics for Acceptance of Seismically Sensitive Items (CCASSI), August 2000
NP-7152-D	Seismic Evaluation of Rod Hanger Supports for Electrical Raceway Systems, January 1998
TR-104871	Generic Seismic Technical Evaluations of Replacement Items for Nuclear Power Plants, May 1995
TR-102363-T2	Evaluation of Snubber Functional Test Methods: Tiers 1 and 2, August 1993
NP-7484	Guidelines for the Seismic Technical Evaluation of Replacement Items for Nuclear Power Plants, February 1993
NP-6809	A Simplified Inelastic Seismic Analysis Method for Piping Systems, June 1990
NP-6628	Procedure for Seismic Evaluation and Design of Small Bore Piping (NCIG-14), April 1990
NP-6442	A Simplified Piping Support System With Seismic Limit Stops, July 1989
NP-5024	Seismic Ruggedness of Aged Electrical Components, February 1987
NP-2902	Piping Seismic Test With Energy-Absorbing Devices, January 1983

Selective Leaching

3002020832	Electromagnetic NDE Techniques for Detection of Selective Leaching in Gray Cast Iron Piping, September 2021
3002020830	Ultrasonic NDE Techniques for Detection of Selective Leaching in Complex Shaped Gray Cast Iron Components, July 02, 2021
3002020827	Selective Leaching Wiki Website v1.0, Nov 2021
3002020822	Accelerated Testing and Evaluation of Factors Affecting Selective Leaching Susceptibility, September 2021
3002016057	Selective Leaching: State-of-the-Art Technical Update, December 2019

PE Products List

Service Water System Products

3002018341	Guideline for Procurement of Replacement Stainless Steel Heat Exchanger Tubing, November 2020
3002010653	Service Water Piping Nondestructive Evaluation Reference Guide, June 2019
3002013207	BPWORKS V3.0: Data Management and Risk Ranking for Buried Underground and Raw Water Piping, November 2018
3002013273*	Chemistry CBT (Computer Based Training) for Service Water Engineers Version 1.0, March 2018
3002010683	Evaluation of Tubercle Growth: A Study of Non-Microbial Tubercle Formation - A Study of Non-Microbial Tubercle Formation, June 2017
3002010661	EPRI Plant-System Equipment Database (PSENV), Version 1.1, December 2017
3002010651	Service Water Mentoring Web Resource, July 2017
3002008008	Novel Methods of Spill Containment and Debris Mitigation on Water Surface, December 2016
3002005334	Guidelines for Relief Request for Use of Nonmetallic Repairs of ASME Class 2 and 3 Piping, August 2015
3002005342	Plant System-Equipment Database (PSENV) Version 1.0, November 2015
3002005150	Service Water Intake Blockages: Event Forecasting for Minimizing Impacts, April 2015
3002003191	Guideline for Preventing Galvanic Corrosion in Above-Ground Dissimilar Metal Piping Systems, May 2014
3002003190	Engineering and Design Considerations for Service Water Chemical Addition Systems, December 2014
3002000590	Closed Cooling Water Chemistry Guideline: Revision 2, December 2013
3002013814*, 3002001913*	Computer Based Training (CBT) - American Society of Mechanical Engineers (ASME) CBT for Service Water System Engineers v1.0, November 2013
1025275	Guidelines for Replacement Materials for Service Water Systems, August 2012
1010059	Service Water Piping Guideline, September 2005
1008282	Life Cycle Management Sourcebook for Nuclear Plant Service Water Systems, March 2005
1009598	Water Treatment Strategies: Microorganism Control, December 2004
1009597	The Role of Manganese Dioxide (MnO ₂) Deposition in Microbiologically Influenced Corrosion, December 2004
1008185	Microbially Influenced Corrosion Mechanistic Studies: Using a Multiple-Array-Sensor to Understand the Effect of Environment on Corrosion Caused by Sulphate-Reducing Bacteria, December 2004
1003442	Predictive Model for Non-Microbially Influenced Corrosion Tuberculation: Initial Model for Formation and Growth of Tubercles Caused by Electrochemical Corrosion, November 2003
1003320	Supplemental Guidance for Testing and Monitoring Service Water Heat Exchangers, October 2003

TR-109634	Flow Meter Guideline, March 1999
TR-109633	Guideline for the Evaluation and Treatment of Corrosion and Fouling in Fire Protection Systems, March 1999
TR-110392	Eddy Current Testing of Service Water Heat Exchangers for Engineers Guideline, February 1999
TR-108923	Recommended Cleaning Practices for Service Water Systems, December 1997
TR-103403	Service Water System Corrosion and Deposition Sourcebook, March 1994
TR-102823	Biocidal Treatment for Control of Service Water System Microfouling, November 1993
TR-102204	Service (Salt) Water System Life-Cycle Management Evaluation, May 1993
NP-6815-D	Detection and Control of Microbiologically Influenced Corrosion: An Extension of the Sourcebook for Microbiologically Influenced Corrosion in Nuclear Power Plants, June 1990
NP-5580	Sourcebook for Microbiologically Influenced Corrosion in Nuclear Power Plants, March 1988
Library	SWAP Technical Library (access by logging on to https://swap.epri.com)

Switchgear and Electrical Buses

3002015459	Critical Maintenance Insights on Preventing High-Energy Arcing Faults, March 2019
3002011923	Critical Maintenance Insights on Preventing High-Energy Arcing Faults, December 2017
3002011484	Reliability and Maintenance of Bolted Busbar Connections, May 2018

Transformers and Switchyard

3002021342	EPRI Power Transformer Guidebook: The Copper Book, December 2021
3002020821	Power Transformer and Switchyard Monitoring Technologies for Nuclear Power Plants: An Overview of Potential Applications, August 2021
3002018284	Medium-Voltage Transformer and Cable Very Low Frequency (VLF) Tan Delta Testing from the Cable Termination: VLF Testing of Transformers, November 2020
3002015735	Update on the Application of the Power Transformer eXpert (PTX) Software for Nuclear Power Plant Large Power Transformers, November 2019
3002015736	Development of a Risk Assessment Tool for Equipment Important to Nuclear Power Plant Interconnection Reliability: Guideline for Offsite Power and Generation Interconnection Equipment Reliability Assessments, November 2019
3002016977	Quick Guide: Continuous Online Monitoring (COLM)—Station MPT_GSU with De-Energized Tap Changer (DETC), August 2019
3002013169	Power Transformer eXpert (PTX) Enhancement and Application for Nuclear Power Plants: Condition Assessment Software Case Study for Nuclear Power Plant Fleet, December 2018

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Transformers and Switchyard (continued)

3002013162	Industry Practices Related to the Application and Maintenance of Grounding Systems for Nuclear Power Plant Switchyards, December 2018
1013566	Plant Support Engineering: Large Transformer End-of-Expected-Life Considerations and the Need for Planning, December 2006

Training Products

3002020811	Technical and Quality Requirements CBT, October 2021
3002020810	Procurement Engineering Safety Classification On-Demand Training, June 2021
3002020809	Prevention and Detection of Undeclared Digital Content CBT, June 2021
3002017353, 3002018472	Visual Identification of Aging Degradation - Aging Management Series, December 2020
3002015133, 3002018459, 3002015130	Fundamentals of Aging Degradation and Management - Aging Management Series, November 2020
3002015134, 3002018471	Fundamentals of Managing Aging Programs USA - Aging Management Series, November 2020
3002015135, 3002018460	Metals Aging Degradation Mechanisms - Aging Management Series, November 2020
3002016002	Intro to EPRI Materials Degradation Matrix, December 2019
3002015921	Commercial Grade Item Dedication Computer-Based Training, November 2019
3002015012	Materials Handbook for Nuclear Plant Pressure Boundary Applications Module 2: Section I Chapter 3 Stainless Steel for Piping, Components, March 2019
3002015013	Materials Handbook for Nuclear Plant Pressure Boundary Applications Module 3: Section I Chapter 4 Nickel-Base Alloys for Pressure Vessels, Components and Piping, March 2019
3002013813	Obsolescence Program Manager Computer Based Training (CBT) v1.0, March 2018 3002015011 Materials Handbook for Nuclear Plant Pressure Boundary Applications Module 1: Introduction to The Materials Handbook for Nuclear Plant Pressure Boundary Applications, March 2018
3002013820*	Training Module for Cathodic Protection: Cathodic Protection Training for Supervisors and Managers at Nuclear Power Plants, Version 2015, March 2018
3002015150, 3002013314*	Computer Based Training Module for Microbiologically Induced Corrosion (MIC), March 2018
3002013312*	Computer-Based Training Module on Erosion in Piping Systems, March 2018
3002001913	Computer Based Training (CBT) - American Society of Mechanical Engineers (ASME) CBT for Service Water System Engineers v1.0, December 2013
3002013814* 3002001913	(CBT) - American Society of Mechanical Engineers (ASME) CBT for Service Water System Engineers v1.0, November 2013

3002000564	Training Module: Flow Accelerated Corrosion (FAC) for Supervisors and Managers, May 2013
3002013311*, 1013249	Computer-Based Training Module on Flow-Accelerated Corrosion (FAC) for non-FAC Personnel, May 2006
TR-107436	Effective Engineering Technical Training at Nuclear Power Plants, April 1998

Engineering Fundamentals, Computer-Based Training

3002021977	Engineering Fundamentals - Nuclear Power Plant Materials, Version 2.0, October 2021
3002021976	Process Control Systems, Version 2.0, June 2021
3002013286*	Electrical Engineering, Version 2.0, February 2013
3002013196	Heat Transfer and Fluid Flow, Version 6.0, January 2013
3002013200	Mechanical Engineering Topics, Version 4.0, January 2013
3002013274	Basic Atomic and Nuclear Physics, Version 2.0, November 2012
3002013276*,	Civil Engineering Topics, Version 2.0, November 2012
3002013275*,	Core Protection, Version 2.0, November 2012
3002013188	Chemistry, Version 3.0, October 2012

Engineering Technical Training Modules (ETTM)

Civil/Structural Series

3002015128, 3002018462	Concrete Aging Degradation Mechanisms – Aging Management Series, November 2020
3002018490	Criteria for Selecting a Corrosion Mitigation Technique in Reinforced Concrete, October 2020
3002018489	Aging Management Activities for Corrosion of Concrete Reinforcement, October 2020
3002016087	Visual Examination of Concrete Containments, October 2019
3002015138	Radiation of Concrete - Aging Management Series, June 2019
3002013106	Alkali Silica Reaction Training Module 1 – Introduction Video, July 2018
3002013107	Alkali Silica Reaction Training Module 2 - Detection and Confirmation, July 2018
3002013108	Alkali Silica Reaction Training Module 3 - Evaluating and Managing Impacts of ASR, July 2018
3002013811*, 3002000534**	Engineering Technical Training Module (ETTM) - Missile Impact v1.0, August 2013
3002013799*, 1020667**	Soil Structure Interaction (ETTM - SSI) Version 1.0, November 2010

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PE Products List

Training Products (continued)

3002013797*, 1020475**

Design of Concrete Anchors, January 2010

3002013260*, 1020473**

Finite Element Analysis, December 2009

3002013792*, 1019151**

Seismic Analysis, October 2009

Electrical Series

3002017276

Electronic and I&C Equipment Aging Degradation Mechanisms - Aging Management Series, September 2019

3002015129

Electrical Equipment Aging Degradation Mechanisms - Aging Management Series, June 2019

3002015986

Plant Engineering: Cable Aging Management Training: Identification of Adverse Environment, and Introduction to Visual/Tactile Assessment of Cable, May 2019

3002015148

Low Voltage Cable Aging Management Training, February 2019

3002013819*

Engineering Technical Training Module (ETTM) - Medium Voltage Switchgear, Version 1.0, September 2014

3002013816*

Engineering Technical Training Module (ETTM) - Small AC Induction Motors, Version 1.0, March 2014

3002013278*, 1025265

Cable Separation, 1.0, August 2012

3002013186 *, 1022976**

Medium Voltage System Protection and Coordination Version 1.0, December 2011

1020664*

Low Voltage System Protection and Coordination, November 2010

3002013265*, 1020669**, 1010803

Battery Chargers and Inverters (ETTM - BCI) Version 1.0, November 2010

3002013436*, 1016698**

Power Cable Selection and Application, December 2008

1015412**

Large AC Motors, August 2007

3002013310*, 1009318**

Molded Case Circuit Breaker, December 2003

Instrumentation and Control Series

3002013818*

Engineering Technical Training Module (ETTM) - EMI and RFI Noise Analysis, Version 1.0, August 2014

3002013817*

Engineering Technical Training Module (ETTM) - Signal Conditioning, Version 1.0, June 2014

3002014217*, 3002000536**

Engineering Technical Training Module (ETTM) - Instrument Setpoint Determination (ETTM-ISD) v1.0, October 2013

3002013812*, 3002000535

Engineering Technical Training Module (ETTM) - Level Measurement v1.0, October 2013

3002013810*, 3002000533

Engineering Technical Training Module (ETTM) - Instrumentation Sensing Line Routing and Separation Version 1.0, August 2013

3002014218*, 3002000539**

Engineering Technical Training Module (ETTM) - Flow Orifice Sizing and Calculation Version 1.0, July 2013

3002013807*, 3002000151**

Engineering Technical Training Module (ETTM) - Temperature Measurement Version 1.0, February 2013

3002013271*, 1022978**

Flow Measurement Version 1.0, December 2011

3002013800*, 1020668**

Pressure Measurement, November 2010

3002013796*, 1020472**, 1010837

Valve Actuator, December 2009

3002013259*, 1019150**

Instrument Uncertainty Determination, October 2009

3002013258*, 1016699**

Control Theory and Control Loop Tuning, December 2008

3002013313*, 1013590**

Electrical and Pneumatic Signal Loops, July 2006

Mechanical Series

3002022572

Módulos de Entrenamiento Técnico Ingenieril (ETTM)- Propiedades Materiales de los Metales, versión 1.0, December 2021

3002022565

ETTM-Erosión, Corrosión y Corrosión Acelerada por Flujo, Módulo CBT Versión 1.0, December 2021

3002015137, 3002018464

Polymers Aging Degradation Mechanisms - Aging Management Series, December 2020

3002015136, 3002018466

Protective Coatings Aging Degradation Mechanisms - Aging Management Series, December 2020

3002015155, 3002018468

Selective Leaching - Aging Management Series, November 2020

3002015142

CP101: Training for the Cathodic Protection System Owner, November 2019

3002017310

Boric Acid Corrosion Control Limited VT-2, October 2019

3002014893

Flow-Accelerated Corrosion: Mechanics and Control, February 2019

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Training Products (continued)

3002015151

Nuclear Coatings Training, February 2019

3002015144

Flow Accelerated Corrosion Program Owner Training, January 2019

3002015139

Buried Pipe 101: Buried Pipe Program Owner Training, January 2019

3002015140

BPWORKS™: Risk Ranking of Buried Piping Systems, January 2019

3002013272

Computer Based Training (CBT) Buried Pipe Condition Assessment and Repair, Version 1.0, March 2018

3002013311

Computer-Based Training Module on Flow-Accelerated Corrosion (FAC) for non-FAC Personnel, March 2018

3002013815*, 3002002775**

Engineering Technical Training Module (ETTM) - Two-Phase Phenomenon, Version 1.1, February 2014

3002013809*, 3002000532**

Engineering Technical Training Module (ETTM) - Air and Gas Properties Version 1.0, June 2013

3002013287*, 3002000150**

Engineering Technical Training Module (ETTM) - Isolation Valves Version 1.0, March 2013

3002013284*, 1025269

Head Loss in Pipe and Piping Components for Compressible Fluids 1.0, December 2012

3002013806*, 1025268

Positive Displacement Pumps (PDP) Version 1.0, November 2012

3002013279*, 1025267**

Head Loss in Pipe and Piping Components for Incompressible Fluids ETTM Version 1.0, October 2012

3002013803*, 1022977**

Jet Impingement 1.0, December 2011

3002013164*, 1022975**

Throttle Valves 1.0, December 2011

3002013270*, 1022974**

Engineering Technical Training Module Water and Steam Properties (ETTM: WSP) Version 1.0, December 2011

3002013261*, 1020666**

Check Valves 1.0, October 2010

3002013798*, 1020665**

Heat Transfer Calculations Version 1.0, September 2010

3002013201*, 1020474

Centrifugal Pump Vibration 1.0, August 2010

3002013793*, 1019152**

Relief and Safety Valves, November 2009

3002013794*, 1019153**

Water Hammer, October 2009

3002013429*, 1016248**

Material Properties of Metals, December 2007

3002013257*, 1013592, 1010793**

Erosion, Corrosion, and Flow-Accelerated Corrosion (FAC), Version 1.0, November 2006

3002013256*, 1013591**

Heat Exchanger (HE), Version 1.0, October 2006

3002013157*, 1010060**

Centrifugal Pumps, Version 1.0, December 2005

Package of ETTMs (Excludes Computer-Based Training Modules)

1003744

Engineering Technical Training Modules (ETTM) Kit, March 2005
[Includes all of the individual ETTMs]

* EPRI U Product

** CBT

Training Courses

EPRI U is pleased to offer a variety of Plant Engineering training courses that cover a number of issues of interest to utility engineers. These courses take place throughout the year and are typically held at our Charlotte, North Carolina facility. Many of these courses are also available for on-site implementation and can be customized for site-specific needs.

A complete listing of all EPRI U training courses and registration is available on EPRI's Learning Management System (LMS) at www.epriu.com. For more information on any of EPRI's courses, please contact the training department at EPRIU@epri.com.

BPWORKS™ - Risk Ranking of Buried Piping Systems Software Training

This one-day class is designed to provide training in the latest release (V2.2) of the EPRI BPWORKS™ software. EPRI BPWORKS™ is a MS Windows-based software code that provides risk-based ranking of buried piping systems. The risk ranking is achieved by determining several matrices of the likelihood of degradation and the consequences of degradation at each piping location. The rankings can then be combined and compared to help focus inspections at the locations of greatest risk to plant operation and plant personnel.

Buried Pipe 101 - Buried Pipe Program Owner Training

This seminar is designed to provide training to the buried pipe program owner and other plant personnel involved with ensuring the safe and reliable operation of buried piping systems. It focuses on the EPRI/Buried Pipe Integrity Group-recommended program to control degradation in buried pipe and the roles, responsibilities, and tasks that the program owner will need to implement.

Cable Aging (Low-Voltage) Management Course

Safety-related and operationally important cables age with time, and not all cables age the same way. This course provides attendees with an understanding of the capabilities of low-voltage cable polymers, the types of aging they can expect to encounter in cables, and the available means of monitoring cable insulations and jackets to preclude in-service failures. The training describes methods for assessing plant cables on a worst-case basis that will minimize the cost of aging management while ensuring satisfactory long-term service. This course concentrates on low-voltage cables (<1000 V). See the Cable Aging (Medium-Voltage) Management Course below.

Cable Aging (Medium-Voltage) Management Course

This course covers failure mechanisms associated with medium-voltage cables (>4160 Vac) and the broad range of issues associated with cable selection, removal, and replacement. Subjects include cable design, the polymers used for jackets and insulation, splicing and termination, water-treeing, partial discharge, cable testing, and fault location and failure assessment. The course is presented in cooperation with the University of Wisconsin.

CHECWORKS™ Software Training

The CHECWORKS™ Steam/Feedwater Application (SFA) predicts flow-accelerated corrosion in power plants and manages associated inspection data. The course includes lectures to cover the basis and intended functions of the software features as well as several hands-on sessions using the program. By taking this training, the individual will gain sufficient knowledge to work with the CHECWORKS™ software to predict and address flow accelerated corrosion behavior in power plant piping.

Equipment Qualification for Nuclear Power Plants Course

This training course presents the "how and why" behind the need to plan and implement an EQ program as an integral part of a plant maintenance program. The course is composed of lectures, examples, and actual utility case histories in the preservation of qualified status of safety-related equipment.

FAC Program Owner Training

Flow-Accelerated Corrosion Program Owner Training is focused on the day-to-day activities of the FAC Program Owner. Topics include: history of FAC events, the mechanism of FAC, program responsibilities, long term strategy, among others. The training modules were originally developed and modified by experienced FAC program engineers and contain a wealth of industry experience.

Fundamentals of Equipment Seismic Qualification Training

The seismic qualification of structures, systems, and components is an important consideration in nuclear power plant design, operation, and maintenance. This course is designed to provide new or inexperienced utility engineering personnel with the basic knowledge and skills for performing seismic qualification of equipment. Individuals assigned the responsibility of seismic qualification activities in nuclear power plants will find this course beneficial.

Identification and Detection of Aging Issues Course

A key factor in developing effective aging management strategies is enhancement of the plant staff's understanding of aging degradation and their ability to detect the associated leading indicators of degradation. This course is focused not only on identification of indicators, but also on understanding the degradation mechanisms and stressors that may accelerate equipment aging.

Introduction to Heat Exchangers Training

The EPRI Heat Exchanger Training Course provides an introductory overview for engineers new to heat exchangers in nuclear power plants. The course provides a fundamental understanding of heat exchanger design, failure modes, and maintenance practices for heat exchangers. This course is offered as both a standalone course and as a combined course with the Service Water System Engineer Course.

Training Courses (continued)

Microbiologically Influenced Corrosion (MIC) Course

A sound understanding of organisms that cause corrosion and their interaction with the environment is critical to developing an effective detection and treatment program. Individuals attending this course will leave with an understanding of microorganisms and techniques to help reduce the operation and maintenance costs of plant water systems.

Nuclear Coatings Training

The Nuclear Coatings training was developed by utility personnel with support from the Nuclear Utility Coatings Council (NUCC). It is designed to provide a fundamental understanding of coatings and focuses specifically on coating issues unique to nuclear power plants. The course will benefit plant personnel responsible for the selection, procurement, application, and maintenance of coatings at their sites.

Nuclear Utility Procurement Course

Through the Joint Utility Task Group (JUTG), EPRI has developed a comprehensive set of guidelines to assist its members in procurement, documentation, source verification, audits, receipt inspection, testing, and acceptance of commercial grade items (CGIs) for use in safety-related nuclear applications. This comprehensive course uses lectures, examples, exercises, and discussion groups to address key procurement issues facing the industry.

Nuclear Procurement Issues Committee Audit Team Leader Training

This course is designed to communicate the skills and information necessary to lead a NUPIC audit. Students will become familiar with NUPIC processes, documents and forms, and will be provided with a detailed overview of the coordination and activities necessary to plan, execute, and document a NUPIC audit. The course includes lecture by experienced audit team leaders, as well as interactive workshops.

Procurement of Reactor Coolant Pressure Boundary Replacement Items

Specifying, procuring, and accepting products designed to the ASME Code poses a continuing challenge to nuclear utilities. This course presents the basic ASME Code concepts related to the procurement process at nuclear power plants and is useful both to personnel recently assigned to procurement and to seasoned procurement engineers.

Service Water Heat Exchanger Testing Course

Many industrial and utility plants have developed test programs for their service-water-cooled heat exchangers in an effort to ensure safe and efficient plant operation. The goal of this course is to provide utility engineers with the tools necessary to design and implement test programs for their heat exchangers that satisfy the objectives of their test programs and yield test results with acceptable levels of uncertainty.

Service Water System Engineer Course

This four day course is designed to provide an opportunity for newly assigned and reassigned engineers and managers to become familiar with the function, operation, and maintenance of service water systems (SVWS). The first three days of the course highlight, through case histories and experiences, the issues facing a service water systems engineer and identifies resources that are available to assist in developing an effective service water systems operation and maintenance program. The final day is focused on the programmatic aspects of administering and effectively managing service water piping degradation, as described in the Service Water Piping Guideline (SWP). The guideline, and therefore this training, provides background information required for plants to develop their Service Water Piping program. It is not a prescriptive document for inspections, mitigation, responses to pinhole leaks, ultimate heat sink inventory, or handling of repairs for every plant.

The more experienced service water systems engineer will benefit from the information presented on current trends, current issues, and new techniques and technologies. Because of its cross-disciplinary format, this course is particularly well suited for those individuals, such as managers and supervisors, who need a better understanding of the service water systems and how its operation can affect other plant systems and components. This course is offered as both a standalone course and as a combined course with the Introduction to Heat Exchangers Training.

Training for the Cathodic Protection System Owner

This three-day training course is designed to provide training to cathodic protection engineers, buried pipe program owners, and other plant personnel involved with ensuring the safe and reliable operation of buried piping systems and other buried structures, such as tanks. It focuses on the use of cathodic protection to provide corrosion protection to buried facilities and the use of indirect assessment methods to ascertain the condition of coatings and identify locations where corrosion might be occurring.

Counterfeit and Fraudulent Item Training Course

This training course consists of two half-day sessions. Session 1 addresses current regulatory expectations, EPRI guidance, and programmatic measures that can be taken to mitigate exposure to counterfeit electronics.

Session 2 consists of an interactive, hands-on workshop which includes handling and examining a number of hardware items. The interactive workshop introduces participants to the growing counterfeit issue and includes discussion of applicable processes, components, roles and responsibilities.

This course is currently offered on request.

2022 Plant Engineering Meeting Calendar

Date	Name of Meeting/Conference	Location	Project Manager
January 26, 2022	Nuclear Utility Coatings Committee (NUCC) Members Only Quarterly	Webcast Virtual	Dave Olack
February 7, 2022	Equipment Reliability Roundtable	Savannah, GA	Jeff Greene
February 8, 2022	Maintenance and Engineering (NMAC/PE) Research Integration Committee	Savannah, GA	Jeff Greene
February 22–24, 2022	Large Electric Motor User Group (LEMUG)	Virtual	Wayne Johnson
February 22–24, 2022	JUTG Procurement Forum	Sand Key, FL/Hybrid	Marc Tannenbaum
February 22–24, 2022	CHECWORKS User Group (CHUG)	Virtual	Ryan Wolfe
March 1–2, 2022	Service Water Assistance Program (SWAP)	Virtual	Dave Olack
March 2–3, 2022	Equipment Reliability Working Group (ERWG)	Charlotte NC/Virtual	Jeff Greene
March 8–9, 2022	Buried Pipe Integrity Group (BPIG)/Cathodic Protection User Group (CPUG)	Webcast Virtual	Dylan Cimock
March 15–16, 2022	Heat Exchanger Performance User Group (HXPUG)	Virtual	Kurt Crytzer
May 2022	Nuclear Utility Coatings Committee (NUCC)	Virtual	Dave Olack
June 6–9, 2022	Circuit Breakers User Group (CBUG)	Charlotte, NC	Jim Sharkey
June 15–16, 2022	Seismic Qualification Reporting and Testing Standardization (SQURTS)	Charlotte, NC/Hybrid	Jill Lucas
June 28–30, 2022	Cable User Group	Charlotte, NC	Drew Mantey
June 29, 2022 Olack	Service Water Assistance Program (SWAP) Quarterly Members Only	Webcast	Webcast Dave
July 18–20, 2022	Transformer and Switchyard User Group (TSUG)	Charlotte, NC	Sami Debass
July 18–20, 2022	CHECWORKS User Group (CHUG)	Virtual	Ryan Wolfe
July 2022	Plant Performance Enhancement Program (P2EP) Virtual	Kurt Crytzer	
August 2–4, 2022	JUTG Procurement Forum	Clearwater, FL/Virtual	Marc Tannenbaum
August 31, 2022	Nuclear Utility Coatings Committee (NUCC) Members Only Quarterly Webcast	Webcast	Dave Olack
August 2022	Joint Buried Pipe Integrity Group (BPIG)/Cathodic Protection User Group (CPUG)	Virtual	Dylan Cimock
August 2022	Selective Leaching Task Force	Webcast	Dylan Cimock
August 2022	Nuclear Utility Relay User Group (NURUG)	Virtual	Wayne Johnson
September 13, 2022	Maintenance and Engineering (NMAC/PE) Research Integration Committee	Boca Raton, FL	Jeff Greene
September 21–22, 2022	Equipment Reliability Working Group (ERWG)	Virtual/Charlotte NC	Carl Lane
September 29, 2022	Service Water Assistance Program (SWAP) Quarterly Members Only Webcast	Webcast	Dave Olack
September 2022	Large Electric Motor User Group (LEMUG)	Virtual	Wayne Johnson
October 2022	Heat Exchanger Performance User Group (HXPUG) Webcast	Webcast	Kurt Crytzer
December 2022	Heat Exchanger Performance User Group (HXPUG) Webcast	Webcast	Kurt Crytzer
December 2022	Plant Performance Enhancement Program (P2EP) Webcast	Webcast	Kurt Crytzer

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PE Contacts

Name, Title	Phone	E-mail	Coverage Areas
Kelli Voelsing, Senior Program Manager	704.595.2878	kvoelsing@epri.com	Equipment Reliability, Maintenance, Engineering, Programs, I&C, and Engineering Integration
Jeff Greene, Program Manager	704.595.2666	jgreene@epri.com	Maintenance/Mechanical Program Manager
Michael Thow, Program Manager	704.595.2967	mthow@epri.com	Engineering/Electrical/I&C Program, Cyber Security)
Dylan Cimock, Senior Technical Leader	704.595.2737	dcimock@epri.com	Buried Pipe Integrity Group (BPIG) Lead, Buried Pipe, Cathodic Protection, Selective Leaching, License Renewal (Mechanical) Aging Management
Kurt Crytzer, Principal Project Manager	704.595.2877	kcrytzer@epri.com	Heat Exchangers, Thermal Performance, HXPUG Lead, P2EP Lead, Structural Health Monitoring of Passive Components
Sami Debass, Senior Technical Leader	650.855.2069	sdebass@epri.com	Transformers and Switchyards, Condition Based Monitoring (CBM), Preventive Maintenance (PM), Monitoring and Diagnostic, Long-term Asset Management and NERC/FERC Regulatory Compliance
Tim Eckert, Principal Technical Leader	704.595.2558	teckert@epri.com	Buried Pipe, BOP Corrosion, Service Water
Ilya Golberg, Senior Technical Leader	972.556.6536	igolberg@epri.com	Cables, Long-Term Asset Management Basis Design Application (LAMBDA)
Wayne Johnson, Principal Technical Leader	704.595.2551	wejohnson@epri.com	AC Power Reliability, Transformers, Switchyards, Motors, Batteries, Relays, Diesel Fuel Oil, Lubrication
Jill Lucas, Technical Assistant	704.595.2574	jlucas@epri.com	PE Staff Support, Seismic Qualification Reporting and Testing Standardization (SQURTS)
Drew Mantey, Principal Project Manager	484.467.5864	amantey@epri.com	Passive Electrical Components, Cables, Infrared Thermography, Condition Monitoring (Electrical Testing), Motors, Generators, Plant Electrical Distribution, Substation Predictive Maintenance, Environmental Qualification
David Olack, Principal Technical Leader	980.495.7406	dolack@epri.com	Service Water Assistance Program (SWAP), Nuclear Utilities Coating Council (NUCC), Design/Plant Modification Engineering, Systems Engineering, Emergency Diesel Generators, Procurement Engineering, Mechanical Maintenance
Allison Read, Senior Technical Leader	704.595.2615	aread@epri.com	Procurement Engineering, Supply Chain, Commercial Grade Dedication, Equivalency Evaluation, Safety Classification
Jim Sharkey, Principal Technical Leader	704.595.2557	jsharkey@epri.com	Emergency Power Reliability, Emergency Diesel Generators (EDGs), Switchgear and Circuit Breakers, Electrical Buses, Generators, Excitation and Voltage Regulators
Marc Tannenbaum, Senior Technical Executive	704.595.2609	mtannenbaum@epri.com	Procurement Engineering, Supply Chain, Commercial Grade Dedication, Obsolescence Management, Reverse Engineering, Critical Spares, Supplier Quality Assurance, Equivalency Evaluation, Safety Classification, Procured Item Quality and Reliability
Ryan Wolfe, Technical Executive	704.595.2611	rwolfe@epri.com	Flow Accelerated Corrosion (FAC), CHECWORKS™, CHECWORKS User's Group (CHUG), High-Density Polyethylene (HDPE)

Available PE Applications

Single Point Vulnerability Assessment Tool (SPVAT)	http://spvat.epri.com/
Long-term Asset Management Basis Design Application (LAMBDA)	http://lambda.epri.com
Equipment Reliability Matrix	https://ermatrix.epri.com/
Buried Pipe Inspection Results Database (BPIRD)	http://bpird.epri.com/
Cable Harvesting Guide	http://cableharvest.epri.com/
Seismic Qualification Reporting and Testing Standardization Testing Database	http://squrts.epri.com/
EPRI Procurement Information Center (EPIC) Wiki site	http://epic.epri.com/
Plant Electrical Equipment Reliability Center (PEER)	https://peer.epri.com/

Component Resource Pages

Comprehensive Condenser Resource

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PE User Groups Web Pages/Links

Buried Pipe Integrity Group (BPIG)
Cable Program
CHECWORKS User Group (CHUG)
Circuit Breaker User Group (CBUG)
Heat Exchanger Performance User Group (HXPUG)
Large Electric Motor Users Group (LEMUG)
Nuclear Utility Coatings Council (NUCC)
Plant Performance Enhancement Program (P2EP)
Procurement Technical Assistance Program/Joint Utility Task Group (JUTG)
Relay Users Group
Seismic Qualification Reporting and Testing Standardization User Group (SQURTS)
Service Water Assistance Program (SWAP)
Transformer and Switchyard Users Group (TSUG)

PE Support

PESupport@epri.com

PE staff support for utility issues and PE program information

Plant Engineering

1300 West W.T. Harris Blvd.
Charlotte, North Carolina, 28262 USA

3002007859

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Electric Power Research Institute

3420 Hillview Avenue, Palo Alto, California 94304-1338 • PO Box 10412, Palo Alto, California 94303-0813 USA
800.313.3774 • 650.855.2121 • askepri@epri.com • www.epri.com

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