EPRI | ELECTRIC POWER RESEARCH INSTITUTE

TRAINING GUIDE

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Training's Role in Technology Transfer

Colleagues,

Through EPRI U, we offer the electricity sector's technical and management professionals a growing curriculum of courses and technical training to equip them for essential technical challenges and for professional growth and development. For EPRI members it is instrumental in our broad efforts to enable more effective technology transfer.

EPRI U offerings include classroom courses at EPRI and member locations, online training and courses, Computer Based Training (CBT) modules, video training and other options. Many courses are based on more than 40 years of EPRI research, technology and techniques from its programs in power generation, delivery and use.

Individual courses or programs of instruction can be tailored to your company's or facility's workforce, operations, and strategies. Our instruction can provide broad, foundational knowledge, or it can support certification and qualification for specialized technical skills and applications. Because the knowledge and skills are integral to long-established, ongoing research, many of these courses cannot be offered or duplicated anywhere else.

Expect more opportunities as we develop new courses. Equally important, please share your ideas regarding how EPRI U can support your staff training and development and enhance EPRI technology transfer.

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ENERGY AND ENVIRONMENT TRAINING COURSES

Product ID Number	Title	Format
Asset-Based Environmental Sciences		
3002009778	Groundwater Sampling and Data Management Workshop	Classroom
3002011538	Toxic Release Inventory (TRI) for Power Plants Software User Training	Classroom
Efficient Electrification		
3002015260	Efficient Electrification Training	Classroom
Energy and Environmental Analysis		
3002002230	TAGWeb User Training	Classroom
Energy Sustainability		
3002014150	Sustainability Benchmarking for Utilities: Online Database Training	Classroom
Environmental Aspects of Transmission and Distribution		
3002012584	Electric and Magnetic Fields Knowledge Transfer Initiative: Hands-On, In-Depth Training Seminars	Classroom
3002004161	Mineral Oil Spill Evaluation System – Multiphase Software User Training	Video

Notes:

1. Please refer to EPRI.com to determine the dates and times in-person courses are offered.
2. Some of these courses are fee based. Please refer to EPRI.com to determine the cost.

GENERATION TRAINING COURSES

Product ID Number	Title	Format
Combustion Dynamics		
3002010505	Combustion Dynamics in Gas Turbines Reference Guide	Self-Study Document
Heat Treatment		
3002009054	Best Practices for Field Heat Treatment Setup	Video
3002009057	Field Heat Treatment Setup Walkthrough for a Straight Horizontal Pipe	Video
Human Performance		
3002011177	Human Performance Update: A Practical Guide for Power Plant Operators	Classroom, Self-Study Document
3002003206	What Does Questioning Attitude Look Like?	Video
3002004519	What Does 3 Way Communication and Phonetic Alphabet Use Look Like?	Video
3002004520	What Does Self Check Look Like?	Video
3002004521	What Does Peer Check Look Like?	Video
3002004522	What Does Pre-Job Brief Look Like?	Video
3002004527	What Does Independent Verification Look Like	Video
3002005261	Human Performance Compiled	Video
3002009675	What Does Questioning Attitude Look Like?	Video – Spanish Version
3002009513	What Does 3 Way Communication and Phonetic Alphabet Use Look Like?	Video – Spanish Version
3002009515	What Does Self Check Look Like?	Video – Spanish Version
3002009516	What Does Peer Check Look Like?	Video – Spanish Version
3002009671	What Does Pre-Job Brief Look Like?	Video – Spanish Version
3002009672	What Does Independent Verification Look Like	Video – Spanish Version
Lockout Tagout (LOTO)		
3002005572	Clearance and Tagging Process- Execution (Consolidated Video)	Video
3002007452	Clearance Holder and Tagging Process (Introduction)	Video
3002005573	Clearance Writer and Approver	Video
3002005574	Clearance Hanger and Verifier	Video
3002005575	Clearance Holder and Zero Energy Checks	Video
3002005572	Clearance and Tagging Process – Execution (Consolidated Video)	Video – Spanish Version
3002007452	Clearance Holder and Tagging Process (Introduction)	Video – Spanish Version
3002005573	Clearance Writer and Approver	Video – Spanish Version
3002005574	Clearance Hanger and Verifier	Video – Spanish Version

Product ID Number	Title	Format
3002005575	Clearance Holder and Zero Energy Checks	Video – Spanish Version
Operations Shift Turnover		
3002009505	What Does Good Shift Supervisor Look Like?	Video
3002009506	What Does Good Control Room Operator Turnover Look Like?	Video
3002009507	What Does Good Outside Operator Turnover Look Like?	Video
3002009932	What Does Good Shift Supervisor Look Like?	Video – Spanish Version
3002009933	What Does Good Control Room Operator Turnover Look Like?	Video – Spanish Version
3002009934	What Does Good Outside Operator Turnover Look Like?	Video – Spanish Version
Operator Rounds		
3002012200	What Does Good Outside Operator Paper Rounds Look Like?	Video
3002012201	What Does Good Outside Electronic Rounds Look Like?	Video
3002012202	What Does Good Control Room Operator Paper Rounds Look Like?	Video
3002012203	What Does Good Control Room Operator Electronic Rounds Look Like?	Video
3002012204	What Does Good Outside Operator Paper Rounds Look Like?	Video – Spanish Version
3002012205	What Does Good Outside Electronic Rounds Look Like?	Video – Spanish Version
3002012206	What Does Good Control Room Operator Paper Rounds Look Like?	Video – Spanish Version
3002012207	What Does Good Control Room Operator Electronic Rounds Look Like?	Video – Spanish Version
Plant Simulator		
3002003213	Simulator Usage Guide for Fossil Plants	Classroom, Self-Study Document
Steam Turbines		
3002005182	Guidelines for Reducing the Time and Cost of Turbine-Generator Maintenance Overhauls and Inspections	Self- Study Documents
Troubleshooting		
3002008520	Troubleshooting and Diagnostics for the Power Plant Operator: A Systematic Approach to Troubleshooting	Self-Study Document

Notes:

1. Please refer to EPRI.com to determine the dates and times in-person courses are offered.
2. Some of these courses are fee based. Please refer to EPRI.com to determine the cost.

NUCLEAR TRAINING COURSES

Product ID Number	Title	Format
Aging Management		
1022979	Cable Aging Management Training: Identification of Adverse Environment, and Introduction to Visual/ Tactile Assessment of Cable	CBT
3002015128	Concrete Aging Degradation Mechanisms	Distance
3002015129	Electrical, Electronic, and I&C Equipment Degradation Mechanisms	Distance
3002012336	Equipment Qualification for Nuclear Power Plants	Classroom
3002015133	Fundamentals of Aging Degradation and Management	Distance
3002015130	Fundamentals of Managing Aging Programs International	Distance
3002015134	Fundamentals of Managing Aging Programs USA	Distance
3002015135	Metals Aging Degradation Mechanisms	Distance
3002015137	Polymers Aging Degradation Mechanisms	Distance
3002015136	Protective Coatings and Linings Aging Degradation Mechanisms	Distance
3002015138	Radiation of Concrete	Distance
3002015155	Selective Leaching	Distance
Alkali Silica Reaction (ASR)		
3002013106	Alkali Silica Reaction Training Module 1 – Introduction	Video LMS
3002013107	ASR Training Module 2: Detection and Confirmation	LMS
3002013108	ASR Training Module 3: Evaluation and Managing Impacts of ASR	LMS
Boiling Water Reactor Vessel and Internals		
1023222	Boiling Water Reactor Vessel and Internals Assessment, Radiolysis, and Electrochemical Corrosion Potential Modeling	Classroom Hands-On, Self-Study
1024452	BWRVIP Training Background and History Overview	Self-Study Document
1024452	BWRVIP-94 Program Requirements	Self-Study Document
3002004917	ChemWorks Training Class	Classroom
3002000690	Defining Materials Degradation Vulnerabilities, The Degradation Matrix and Issue Management Tables History and Background	Self-Study Document
1025144	The BWRVIP Integrated Surveillance Program	Self-Study Document
Buried Pipe		
1023249 3002013272	Buried Pipe Condition Assessment and Repair	CBT LMS

Product ID Number	Title	Format
Cathodic Protection		
3002005283 3002013820	Cathodic Protection Training for Supervisors and Managers at Nuclear Power Plants	Presentation LMS
Chemistry		
1025247	Chemistry	CBT
3002013188	Engineering Fundamentals, Chemistry, Version 3.0	LMS
Civil		
1025248	Civil Engineering	CBT
1020475 3002013797	CBT: Engineering Technical Training Modules – Concrete Anchors v1.0	CBT LMS
1020473 3002013260	CBT: Engineering Technical Training Modules – Finite Element Analysis v1.0	CBT LMS
1020475	Design of Concrete Anchors	CBT
1025248 3002013276	Engineering Fundamentals – Civil Engineering Topics, Version 2.0	CBT LMS
1020667 3002013799	Engineering Technical Training Modules – Soil Structure Interaction (ETTM – SSI) Version 1.0	CBT LMS
1020473	Finite Element Analysis	CBT
3002000534 3002013811	Missile Impact	CBT LMS
1019151 3002013792	Seismic Analysis	CBT LMS
1020667	Soil-Structure Interaction	CBT
Core Protection		
1025246	Core Protection	CBT
1020301 3002013275	Engineering Fundamentals – Core Protection Version 2.0	CBT LMS
Electrical		
1020669	Battery Chargers and Inverters	CBT
1025265	Cable Separation	CBT
1026858	Electrical Engineering	CBT
3002002920 3002013818	Electromagnetic Interference and Radio Frequency Interference Noise Analysis	CBT LMS
1026858 3002013286	Engineering Fundamentals – Electrical Engineering, Version 2.0	CBT LMS
1020669 3002013265	Engineering Technical Training Modules – Battery Chargers and Inverters (ETTM – BSI) Version 1.0	CBT LMS
1025552 3002013278	Engineering Technical Training Module – Cable Separation, Version 1.0	CBT LMS

Product ID Number	Title	Format
1022976 3002013186	Engineering Technical Training Modules – Medium Voltage System Protection and Coordination Version 1.0	CBT LMS
1020664	ETTM: Low Voltage System Protection and Coordination CBT Version 1.0	CBT
1009318 3002013310	ETTM Molded Case Circuit Breaker, CBT Module, Version 1.0	CBT LMS
1016698 3002013436	ETTM-Power Cable Selection and Application (PCSA), Version 1.0	CBT LMS
3002002921	Medium-Voltage Switchgear	CBT
1022976	Medium-Voltage System Protection and Coordination	CBT
1009318	Molded-Case Circuit Breakers	CBT
1016698	Power Cable Selection and Application	CBT
3002002918 3002013816	Small AC Induction Motors	CBT LMS
Engineering Fundamentals		
1016313	Maintenance Engineering Fundamentals	Self-Study Document
Equipment Qualification		
1025009 3002013805	AP-913 Training for Engineering	CBT LMS
1022973	Environmental Qualification for Engineering and Maintenance Personnel	CBT
1022961	Equipment Reliability Site-Wide Training, Version 1.0	CBT
Erosion		
1013570 3002013312	Erosion in Piping Systems	CBT LMS
3002000540	Erosion Analysis in CHECWORKS™	Presentation
3002005530	Recommendations for an Effective Program Against Erosion Attack	Self-Study Document
Fatigue Management		
1015010 3002014220	Fatigue Management Handbook, Revision	Self-Study Document LMS
1026448	NDE Training for Thermal Fatigue Cracking (MRP-36, Revision 2)	CBT
3002007853	Management of Thermal Fatigue in Normally Isolated Reactor Coolant Systems Branch Lines, MRP-146	Self-Study Document
3002005510	Materials Reliability Program: Fatigue Management Handbook (MRP-235, Revision 2)	Self-Study Document
1022874	Proceedings of Fatigue Management Handbook Training (MRP-329)	CBT

Product ID Number	Title	Format
Flow-Accelerated Corrosion (FAC)		
3002012309	CHECWORKS™ Software Training	Classroom
1013592 3002013257	ETTM-Erosion, Corrosion and Flow Accelerated Corrosion, CBT Module, Version 1.0	CBT LMS
1013249 3002013311	Flow-Accelerated Corrosion (FAC) for non-FAC Personnel	CBT LMS
3002000564	Flow-Accelerated Corrosion (FAC) for Supervisors and Managers	Presentation
TR-106611-R1	Flow-Accelerated Corrosion in Power Plants	Self-Study Document
3002005208	Flow-Accelerated Corrosion Nondestructive Evaluation Reference Guide	Self-Study Document
3002006970	Flow-Accelerated Corrosion Program Owner Training Course	Classroom
1022295	Mentoring Guide for Flow-Accelerated Corrosion Engineers	Self-Study Document
3002000563	Recommendations for an Effective Flow-Accelerated Corrosion Program (NSAC-202L-R4)	Self-Study Document
Foreign Material Exclusion		
1021238	Foreign Material Exclusion Site Coordinator Training	Classroom
Fuel		
3002014649	BOA, CORAL, and FRED Training	Classroom
3002014195	Fuel Reliability Database (FRED)	LMS
3002002720	Fuel Reliability Guidelines: BWR Fuel Cladding Corrosion and Crud, Revision 1	CBT
3002002795	Fuel Reliability Guidelines: PWR Fuel Cladding Corrosion and Crud, Revision 1, Volumes 1 and 2	CBT
Human Performance and Machine Interaction		
1024860	Assembled Package of Three Human Factors Engineering Training Courses	Classroom
1024859 3002013296	Human Factors Engineering for Implementing Digital Instrumentation and Controls	CBT LMS
1024503	Human Factors Engineering Management	CBT
3002000319	Human Factors Engineering (HFE) Training Course for Operating Nuclear Power Plant Personnel	Self-Study Document
1023011	Human Factors Engineering Training Course for Utilities Involved in New Nuclear Power Plant Design, Construction, and Operation	Classroom
3002000317	Introductory Human Factors Engineering Training Course for Operating Nuclear Power Plant Personnel	Self-Study Document
Instrumentation and Control		
3002005327	CBT (CBT) – Digital Design Guide 2015	CBT
1020472 3002013796	CBT: Engineering Technical Training Modules – Valve Actuator v1.0	CBT LMS

Product ID Number	Title	Format
1016699 3002013258	Control Theory and Control Loop Tuning	CBT LMS
3002002499	Cyber Security Procurement Methodology Training Module Rev. 14.00	CBT
3002000531	Digital Instrumentation and Control CBT Modules (for New and Operating Plants)	CBT
1022247	Digital Instrumentation and Control (I&C) Operating Experience Lessons Learned: Volume II – Case Studies 6–10	CBT
1016722	Digital Instrumentation and Control (I&C) System Operating Experience Lessons Learned: Case Studies	CBT
1013590 3002013313	Electrical and Pneumatic Signal Loops	CBT LMS
3002005506 3002013825	Electromagnetic Interference (EMI) Qualification for Digital Upgrades	CBT LMS
3002011306	EPRI MOV Performance Prediction Methodology Training Course	Classroom
1022978 3002013271	Flow Measurement	CBT LMS
3002000539 3002014218	Flow Orifice Sizing and Calculation	CBT LMS
3002000536 3002014217	Instrument Setpoint Determination	CBT LMS
1019150 3002013259	Instrument Uncertainty Determination	CBT LMS
3002013810	Instrumentation Sensing, Line Routing, and Separation Version 1.0	LMS
3002000535 3002013812	Level Measurement	CBT LMS
E00000000000233875	Limitorque Actuator Fatigue Life Extension Methodology	Classroom
1020854	Materials Reliability Program: Reactor Pressure Vessel Integrity Primer (MRP-278)	Self-Study Document
3002005361	Multi-language Air-Operated Valve Maintenance Application v2.0	Self-Study Document
3002002367	Nuclear Power Plant Instrument and Controls Issues	CBT
1020668 3002013800	Pressure Measurement	CBT LMS
1026857	Process Control Systems	CBT
3002000533	Sensing Line Routing and Separation	CBT
3002002919 3002013817	Signal Conditioning	CBT LMS
3002000151 3002013807	Temperature Measurement	CBT LMS

Product ID Number	Title	Format
1020472	Valve Actuator	CBT
Mechanical		
3002000532	Air and Gas Properties	CBT
1020474	Centrifugal Pump Vibration	CBT
1020666 3002013261	CBT: Check Valves 1.0	CBT LMS
1010060 3002013201	CBT: Engineering Technical Training Module – Centrifugal Pump Vibration 1.0	CBT LMS
3002012926	Component Maintenance Virtual Reality Application (CMVR) v. 1.0	CBT
1026856 3002013196	Engineering Fundamentals – Heat Transfer & Fluid Flow, Version 6.0	CBT LMS
1010775 3002013284	Engineering Technical Training Modules - Head Loss in Pipe and Piping Components for Incompressible Fluids 1.0	CBT LMS
3002000150 3002013287	Engineering Technical Training Module (ETTM) – Isolation Valves, Version 1.0	CBT LMS
1022975 3002013164	Engineering Technical Training Modules – Throttle Valves 1.0	CBT LMS
1022974 3002013270	Engineering Technical Training Module Water and Steam Properties (ETTM: WSP) Version 1.0	CBT LMS
1013592	Erosion, Corrosion, and Flow-Accelerated Corrosion (FAC)	CBT
1010060 3002013157	ETTM-Centrifugal Pumps, CBT Module, Version 1.0	CBT LMS
1013591 3002013256	ETTM-HE (Heat Exchanger) CBT Module, Version 1.0	CBT LMS
3002014543	Fundamentos de ingeniería - Transferencia de calor y flujo de fluidos, Versión 6.0	LMS
1025269	Head Loss in Pipe and Piping Components for Compressible Fluids	CBT
1025267 3002013279	Head Loss in Pipe and Piping Components for Incompressible Fluids ETTM, Version 1.0	CBT LMS
1020665 3002013798	Heat Transfer Calculations	CBT LMS
3002006977	Introduction to Heat Exchangers	Classroom
3002000150	Isolation Valves	CBT
1022977 3002013803	Jet Impingement	CBT LMS
1016248 3002013429	Material Properties of Metals	CBT LMS
1026855 3002013200	Mechanical Engineering Topics	CBT LMS
1025249	Nuclear Power Plant Materials	CBT

Product ID Number	Title	Format
1025268 3002013806	Positive Displacement Pumps	CBT LMS
1019152 3002013793	Relief and Safety Valves	CBT LMS
1022700	Terry Turbine Training	Classroom
1022975	Throttling Valve	CBT
3002002775 3002013815	Two-Phase Phenomenon	CBT LMS
1022974	Water and Steam Properties	CBT
1019153 3002013794	Water Hammer	CBT LMS
Nuclear Physics		
1025245	Basic Nuclear Physics and Reactor Theory	CBT
1025245 3002013274	Engineering Fundamentals – Basic Atomic and Nuclear Physics, Version 2.0	CBT LMS
Plant Engineering		
3002007859	Identification and Detection of Aging Issues	Classroom
1003499	Maintenance Rule Coordinator Training	Classroom
Preventive Maintenance Basis Database		
1015307	Maintenance Engineering Fundamentals	Materials
E00000000000221625	PM Basis – Managing Degradation	Classroom
3002005428	Preventive Maintenance Basic Database (pmbd.epri.com) Web Based Tool	Classroom
Probabilistic Risk Assessment		
1019203	Education of Risk Professionals: Module 1 Report and Slides	Classroom Self-Study document
1021082	Education of Risk Professionals Module 2: Report and Slides	Classroom Self-Study document
1022996	Education of Risk Professionals Module 3: Report and Slides	Classroom Self-Study document
1025289	Education of Risk Professionals Module 4: Report and Slides	Classroom Self-Study document
3002000698	Education of Risk Professionals Module 5: Report and Slides	Classroom Self-Study document
3002003037	Education of Risk Professionals Module 6: Report and Slides	Classroom Self-Study document
3002010025	Fire PRA – Advanced Fire Modeling	Classroom
3002007614	Fire PRA – Circuit Analysis	Classroom
3002012600	Fire PRA – Fire Analysis	Classroom
3002012601	Fire PRA – Fire Human Reliability Analysis	Classroom

Product ID Number	Title	Format
1019204	Introduction to Probabilistic Risk Assessment	CBT
3002000703	Level 2 Probabilistic Risk Assessment (PRA) - Advanced Module: Report and Slides	Classroom Self-Study document
3002013795	Probabilistic Risk Assessments	LMS
3002003046 3002013269	PRA Fundamentals, Version 2.1	CBT LMS
3002013288	PRA Fundamentals, Version 2.1.1, Station Blackout	LMS
3002013014	Risk-Informed Application Training for Non-PRA Staff: Intro to PRA	Classroom
3002013021	Risk Informed Application Training for Non-PRA Staff: Intro to PRA	Distance
3002013015	Risk Informed Application Training for Non-PRA Staff: Risk Informed Engineering Programs (10CFR50.69)	Classroom
3002013022	Risk Informed Application Training for Non-PRA Staff: Risk Informed Engineering Programs (10CFR50.69)	Distance
3002013016	Risk Informed Application Training for Non-PRA Staff: Configuration Risk Management	Classroom
1025290 3002013285	Risk-Informed Regulation	CBT LMS
1021228 3002013290	Risk-Informed Decision Making and Aggregation	CBT LMS
3002007609	Risk Technology Software Training – HRA Calculator	Classroom
3002012741	Risk Technology Software Training – Integrated Risk Technologies (IRT) Software Products (Phoenix Architect – CAFTA, PRAQUANT, UNCERT, ACUBE, DPC; Phoenix Risk Monitor – EOOS)	Classroom
3002001491	Safety Code Training: GOTHIC, MAAP	Classroom
3002000129	Seismic Probabilistic Risk Assessment Training	Classroom
3002007630	Seismic Qualification Utility Group (SQUG) New & Replacement Equipment Training	Classroom
3002007629	Seismic Qualification Utility Group (SQUG) Relay Screening & Evaluation	Classroom
3002001710	Seismic Qualification Utility Group (SQUG) Training	Classroom
3002002856	Seismic Risk Training: Seismic Probabilistic Risk Assessment (PRA) Near Term Task Force (NTTF) 2.1 Workshop	Classroom
Procurement Engineering		
1020955	Counterfeit, Fraudulent and Substandard Items – CBT Version 1.0	CBT
3002007831	Counterfeit Fraudulent and Suspect Items Version 2.0	CBT
3002004578	Introduction to Enhanced Commercial Grade Item Dedication Guidance	Classroom
3002009130	Nuclear Procurement Issues Corporation Audit Team Leader	Classroom

Product ID Number	Title	Format
3002006919	Nuclear Utility Procurement Training Course	Classroom
3002001694 3002013813	Obsolescence Program Manager	CBT LMS
3002005397	Procurement Engineering Basics	CBT
3002009129	Procurement of Reactor Coolant Pressure Boundary Replacement Items Training	Classroom
1020953 3002013801	Quality Control Receipt Inspection	CBT LMS
3002006989	Technical Specialist Training 2.1	CBT
3002009558	Undeclared Digital Content 2017	CBT
1018606 3002013790	Warehouse Inventory Management	CBT LMS
Seismic Equipment Qualification		
3002009127	Fundamentals of Equipment Seismic Qualification Training	Classroom
1007450 3002013821	Seismic Orientation Training Course Software, Version 11/2002	CBT LMS
Service Water		
3002001913 3002013814	American Society of Mechanical Engineers (ASME) for Service Water System Engineers	CBT LMS
3002013273	Chemistry CBT (CBT) for Service Water Engineers Version 1.0	LMS
1024649	Chemistry for Service Water Engineers	CBT
1014967 3002013314	Microbiologically Induced Corrosion	CBT LMS
3002012337	Microbiologically Influenced Corrosion (MIC) Course	Classroom
3002006032	Service Water Heat Exchanger Testing Course	Classroom
3002014410	Service Water System Engineer Training Course	Classroom
Steam Generator		
3002012233	PWR Reactor Internals In-Vessel Inspection Training Course	Classroom
3002002851	Steam Generator Engineering	Presentation
3002002855	Steam Generator Management Program: Pressurized Water Reactor Chemistry Knowledge Transfer, Volume 1: Tools for Economic Decision Making and Optimization of Primary System pH	Technical Report
3002007911	Steam Generator Management Program: Pressurized Water Reactor Chemistry Knowledge Transfer, Volume 2 – Secondary System Purification	Technical Report
Welding and Materials Welding and Repair		
E00000000000240924	Advanced Welding and Manufacturing Part 1 and 2	Classroom

Product ID Number	Title	Format
3002013289	ASME Section XI (923A) Version 1.0	LMS
3002000617 3002013297	Nuclear Weld Overlay Training	CBT LMS
3002011579	Overview of Construction Codes in Nuclear Power Plants	Classroom
3002011255 3002013826	Nuclear Welding Program Overview, Module 1	CBT LMS
3002011258 3002013827	Introduction to Welding, Brazing, and Fusing, Module 2	CBT LMS
3002011259 3002013836	Introduction to Weld Configurations, Considerations, and Defects, Module 3	CBT LMS
3002011260 3002013838	Introduction to Materials and Welding Metallurgy Part 1, Module 4	CBT LMS
3002011261 3002013841	Introduction to Materials and Welding Metallurgy Part 2, Module 5	CBT LMS
3002011262 3002013846	Introduction to ASME Code, Module 6	CBT LMS
3002013847	Introduction to ASME Section IX	LMS
3002011264 3002013848	Filler Metal, Module 8	CBT LMS
3002011265 3002013849	Welding Program Part 1, Module 9	CBT LMS
3002011266 3002013851	Welding Program Part 2, Module 10	CBT LMS
3002011267 3002013853	Alternate Repair Methods, Module 11	CBT LMS
3002011268 3002013854	Inspection Techniques, Module 12	CBT LMS
Work Packages		
1014533	Maintenance Work Package Training for Nuclear Utility Personnel – Student Handbook	Classroom

Notes:

1. Please refer to EPRI.com to determine the dates and times classroom courses are offered.
2. Some of these courses are fee based. Please refer to EPRI.com to determine the cost.

POWER DELIVERY AND UTILIZATION (PDU) TRAINING COURSES

Product ID Number	Title	Format
Efficient Electrification		
3002015260	Efficient Electrification Training	Classroom
Information and Communication Technology and Cyber Security		
1023169	Advanced Distribution Management Systems (DMS) Applications Training – Smart Grid Training Session #1	DVD
1025676	Cost Benefit Analysis for the Smart Grid – Smart Grid Training Session #5	DVD
3002002274	Cost Benefit Analysis for the Smart Grid Session #10	DVD
1025677	IEC 61850 for the Smart Grid – Smart Grid Training Session #6	DVD
1023428	Smart Grid Communications Training – Smart Grid Training Session #2	DVD
1024628	Smart Grid Conservation Voltage Reduction/Volt Var Optimization	DVD
1023489	Smart Grid Cyber Security Training – Smart Grid Training Session #3	DVD
3002001873	Smart Inverters and Their Role in the Smart Grid	DVD
1025678	System Protection Implications with DER – Smart Grid Training Session #7	DVD
3002001096	Utility Grade Communications	DVD
Integration of Distributed Energy Resources (DER)		
3002014546	DER Ride-Through Performance Categories and Trip Settings	Video LMS
3002014545	Overview of IEEE Standard 1547 2018	Video LMS
3002014547	T&D Coordination for DER Ride-Through and Trip Requirements	Video LMS
Transmission and Distribution Courses		
3002001092	Black Book: Switching Safety and Reliability Reference Book – Second Edition	Technical Update
1016823	Blue Book: Transmission Line Reference – 115 – 345kV Compact Line Design	Technical Report
3002009238	Bronze Book: Underground Distribution Systems Reference Book	Technical Update
3002014108	Circuit Breaker Restrike Explained	Video LMS
3002014106	Controlling Transient Overvoltages at the Worksite	Video LMS
3002010077	Copper Book: Power Transformer Guidebook	Technical Update
3002014427	Crossarm Inspection and Evaluation v1.0	LMS
3002014107	Definition and Calculation of Per Unit Values for Transient Overvoltages	Video LMS
3002014172	Equipotential Zones Preventing Induction Hazards	Video LMS

Product ID Number	Title	Format
1020401	Gold Book: Power Electronics-Based Transmission Controllers Reference Book	Technical Update
3002011887	Gray Book: Overhead Transmission Line Lightning & Grounding Reference Book	Technical Update
1014840	Green Book: Underground Transmission Systems Reference Book – 2007 Edition (Electronic and Hard Copy)	Technical Report
3002010060	Green Book: Underground Transmission Systems Reference Book – 2007 Edition (Electronic)	Technical Update
3002014173	Hazards of Step, Touch and Transfer Voltages	Video LMS
3002012665	Increased Power Flow Guide Book - 2018 (The Platinum Book)	Technical Update
3002014175	Introduction to Conductor Connections	Video LMS
1016042	Light Blue Book: Power System Dynamics Tutorial	Technical Report
3002012652	Live Work (2018)	LMS
1024227	Maroon Book: Fault Current Management Guidebook	Technical Update
3002014090	Minimum Approach Distance (MAD) Videos—Module 1: Introduction and Background to MAD	Video LMS
3002014091	Minimum Approach Distance (MAD) Videos—Module 2: What is MAD?	Video LMS
3002014092	Minimum Approach Distance (MAD) Videos—Module 3: How is MAD Determined?	Video LMS
3002014093	Minimum Approach Distance (MAD) Videos—Module 4: Factors that Impact Transient Overvoltages (T-Factors)	Video LMS
3002014094	Minimum Approach Distance (MAD) Videos—Module 5: Methods for Establishing MAD	Video LMS
3002014095	Minimum Approach Distance (MAD) Videos—Module 6: How to Reduce Transient Overvoltages at the Worksite	Video LMS
3002014096	Minimum Approach Distance (MAD) Videos—Module 7: Case Studies, Practicing MAD	Video LMS
3002010067	Olive Book: High Voltage Direct Current (HVDC) Transmission Reference Book – 2017 Edition	Technical Update
3002010124	Orange Book: Transmission Line Reference – Wind-Induced Conductor Motion	Technical Update
3002000978	Overhead Transmission Line Inspection-Online Training (OTLOT) Version 9.0	CBT
3002010099	Overhead Transmission Line Inspection-Online Training (OTLOT)	CBT
3002010150	Platinum Book: Increased Power Flow Reference Book	Technical Update
3002010123	Red Book: AC Transmission Line Reference Book – 200kV and Above – 2017 Edition	Technical Update
1011972	Red Book Kit: EPRI Transmission Line Reference Book – 200kV and Above – 2005 Edition	Assembled Package
3002012856	SF6 (Sulfur Hexaflouride) Analysis, Handling, Environment, Safety, and Detection	Curricula

Product ID Number	Title	Format
3002014174	Storing, Transporting, and Installing Polymer Insulators	Video LMS
1012320	Strategy for Updating EPRI's Transmission Line Reference Book: 115-138-kV Compact Line Design ("The Blue Book")	Technical Update
3002014424	Structure Grounding Measurement	LMS
3002014097	Switching Safety and Reliability: Preparing to Switch Video Training Series Module 1—Introduction	Video LMS
3002014098	Switching Safety and Reliability: Preparing to Switch Video Training Series Module 2—Personal Protection Equipment (PPE)	Video LMS
3002014099	Switching Safety and Reliability: Preparing to Switch Video Training Series Module 3—Substation Safety	Video LMS
3002014100	Switching Safety and Reliability: Preparing to Switch Video Training Series Module 4—Performing a Switching Pre-Job Brief	Video LMS
3002014101	Switching Safety and Reliability: Preparing to Switch Video Training Series Module 5—Preparing to Switch	Video LMS
3002014102	Switching Safety and Reliability: Preparing to Switch Video Training Series Module 6—Performing a Walkdown	Video LMS
3002014103	Switching Safety and Reliability: Preparing to Switch Video Training Series Module 7—Three-Part Communication	Video LMS
3002010134	Tan Book: Live Working Reference Book - 2017	Technical Update
1017742	Teal Book: Best Practices & Life Extension Guidelines for Substations	Technical Update
3002014171	Temporary Protective Grounding of Transmission Lines	Video LMS
3002014176	Using a Single Stage Connection	Video LMS
3002014177	Using a Two Stage Connection	Video LMS
3002014178	Using an Implosive Connection	Video LMS
3002010140	Violet Book Insulators Reference Book	Technical Update
3002010094	Yellow Book: Overhead Transmission Inspection, Assessment, and Asset Management Reference Guide - 2017	Technical Update

Notes:

1. Please refer to EPRI.com to determine the dates and times in-person courses are offered.
2. Some of these courses are fee based. Please refer to EPRI.com to determine the cost.

GRIDED SHORT COURSES

GridEd's short course program seeks to train existing professional engineering staff on topics to prepare them to design and operate the grid of the future. Regular and sustained course offerings are derived from surveys and regular feedback from GridEd utility industry advisors. Courses are taught by EPRI experts, GridEd Partner university professors, and/or other university professors and industry experts with specialized knowledge in power systems engineering, distributed energy resources (DER), distributed generation (DG), and other related topics.

Title	Format
Applications of Smart Inverter Technology	Classroom, Online
Big Data Analytics for Electric Power Distribution Systems	Classroom, Online
Bulk System Integration of Variable Generation	Classroom, Online
Business Case Analysis in the Electric Utility Industry	Classroom, Online
Distributed Generation Interconnection on Radial Distribution Systems	Classroom, Online
Distributed Generation Technologies	Classroom, Online
Power Distribution System Reliability	Classroom, Online
Electric Power Distribution Systems	Classroom, Online
Electric Transportation	Classroom, Online
Electricity Markets	Classroom, Online
Energy Storage Technologies, Applications, and Integration	Classroom, Online
IEEE Standard 762	Classroom, Online
Electric Power Quality	Classroom, Online
Unbalanced Distribution System Analysis	Classroom, Online
Utility Applications of Power Electronics	Classroom, Online

Refer to EPRI products 3002002386 and 3002008740.

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NONDESTRUCTIVE EXAMINATION (NDE) TRAINING

The need for specific training and better documentation of nondestructive examination (NDE) personnel qualifications is becoming more evident across the electricity sector. EPRI's NDE Center has identified two specific categories of NDE training to best serve the industry's need for enhanced personnel qualification programs. These categories include in-service inspection (ISI) training and technical skills training.

Background

Qualified utility and supplemental personnel are critical to a plant's ability to safely and effectively conduct maintenance tasks and help reduce the length of outages. The NDE Training and Qualification program streamlines onboard processes; improves the work quality; and saves time, money, and effort for utilities and workforce providers. The NDE Training and Qualification program includes a task analysis, objectives, written test items, and performance (practical) evaluations. It covers tasks performed by utility and supplemental workforce.

Evaluations and Qualifications

EPRI develops and maintains knowledge and practical examinations for NDE-related activities. Each evaluation covers a specific task area, such as ultrasonic and visual examination practices, and includes both knowledge tests to assess worker knowledge and a practical hands-on demonstration to verify worker skills. The NDE Training Program and Qualification exam information is available on epri.com.

Course and Qualification Format

The Visual Examination (VE) program is composed of three courses or competency areas, Levels I, II, and III. Each week-long course offers quality instruction via lectures, question and answer sessions, instructional DVDs, and hands-on laboratory exercises. Competency examinations are included. The VE materials and training cover techniques and applications specified in the ASME Section XI Code (including IWE and IWL) and related documents.

The Ultrasonic Examination training program is composed of three courses or competency areas, Levels I, II, and III Method. The Level III course is five days. The Level I and II courses are two weeks each, and competency examinations are included. This course series includes a range of information from basic theory to more complex issues such as detecting and evaluating indications.

The In-Service Inspection training is a four-and-a-half-day course developed for engineering personnel or management who rely on the NDE process but are not directly involved with performing examinations. The intent is to provide an overview of the NDE methods, ASME Code Sections V and XI, and their applications. In addition to classroom lecture, the course includes several demonstrations and hands-on laboratory sessions. Engineers and other personnel involved in in-service inspection, design, quality assurance, maintenance, and licensing, as well as management, will benefit from the course. A modified three-day (24-hour) version of the training provides an overview of the NDE methods, ASME Code Sections V and XI, and their applications.

Materials

Student and Instructor course materials are available for a fee to individuals who have not participated in one of EPRI's courses. A copy of the materials is included in the registration fee for students who participate in an EPRI course.

Qualification Examination Services

Qualification examination services not in conjunction with a training course are available for all NDE technical skills; Level I, II, and III training programs; and other applicable training programs (including general, specific, and practical examinations). These fees also include applicable CEU and/or transcript documentation.

Title	Format
ASME Section XI Flaw Evaluation	Classroom
ASME Section XI Flaw Evaluation	Self-Study Document
ASME Section XI — Visual Acuity Cards for VT-1, VT-2, and VT-3 with Certification	Self-Study Document
Boric Acid Corrosion Control (Evaluator)	Classroom
Boric Acid Corrosion Control(VT-2)	Classroom
Concrete Nondestructive Evaluation Workshop	Classroom
Introduction to Phased Array Ultrasonic Examination	Classroom
IWE/IWL	Self-Study Document
Level III — Basic	Self-Study Document
Level III — Specific	Self-Study Document
Level III Basic	Classroom
Level III Specific	Classroom
NDE for Engineers	Self-Study Document
NDE for Engineers	Classroom
NDE Instructor Training	Self-Study Document
NDE Instructor Training	Classroom
Ultrasonic Examination (Level II)	Self-Study Document
Ultrasonic Examination (Level III)	Classroom
Ultrasonic Examination (Level III)	Self-Study Document
Ultrasonic Examination (Levels I or II)	Classroom
Ultrasonic Examination (Levels I)	Self-Study Document
Ultrasonic Examination of Austenitic Stainless-Steel Pipe Welds for Cracking	Classroom
Visual Examination — Level I	Self-Study Document
Visual Examination — Level II	Self-Study Document
Visual Examination — Level III	Self-Study Document
Visual Examination (Levels I, II, or III)	Classroom
Visual Examination Containment IWE/IWL (Level II)	Classroom

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STANDARDIZED TASK EVALUATIONS

The Standardized Task Evaluation (STE) program streamlines qualification procedures; improves the work quality; and saves time, money, and effort for utilities and workforce providers. STEs include a task analysis, objectives, knowledge test items, and performance (practical) evaluations. They cover tasks performed by utility and supplemental workforce. Over 90 tasks are available on epri.com.

Background

Qualified utility and supplemental personnel are critical to a plant's ability to safely and effectively conduct maintenance tasks and help reduce the length of outages. EPRI's STE Program supports these efforts through a proven knowledge and skills evaluation process that ensures the competency of the industry's craft and technician workforce. Program members include utilities and workforce providers.

Project Approach

STEs are used to ensure that the workforce is competent to reliably perform the many tasks associated with operating and maintaining industry facilities. The approach is predicated on the idea that there is no need to re-train experienced craft-persons for similar tasks at different plants. Rather, testing to validate previous training and experience provides assurance that a person will perform to high standards. Program implementation as described in EPRI Product 3002006470 is achieved through: evaluations (written and practical), a national registry, and program administration industry standards.

Evaluations

Program participants continue to collaboratively develop evaluation tests that support high-priority industry needs. Each evaluation covers a specific task area, such as rigging or valve maintenance, and includes a knowledge test to assess worker knowledge and a practical hands-on demonstration to verify worker skills. Over 90 evaluations have been developed within the STE program and are available to program participants on www.epri.com. The current STE library is provided, beginning on the next page.

Program Administration Industry Standards

If station personnel can objectively validate that a supplemental worker has been trained and has demonstrated their ability to perform a specific task through an independent evaluation, the station may conclude that the individual meets the qualification requirements for that task at the station. The EPRI STE process provides a method to accomplish that objective validation.

EPRI's Administration Protocol for Portable Practicals (AP3) (EPRI Product 3002010576) was developed to evaluate workforce provider practices for administering EPRI's STEs. This protocol reflects industry consensus standards for administering practical evaluations, and participating workforce providers are eligible for a review of their training practices under this program.

National Registry

The results from the evaluations are documented in a national registry of personnel who have demonstrated competency in specific task areas. Participating organizations have access to EPRI's website that hosts the on-line registry. This registry documents the test results of workers who have completed a knowledge and performance evaluation on a given task. Utilities and workforce provider organizations can use the registry to verify these results. Utilities may use those results to establish worker qualifications.

Library of STEs	
Diagnostic Testing	Perform air-operated valve diagnostic testing
	Perform motor-operated valve diagnostic testing
Electrical Maintenance	Read electrical prints
	Electrical safety for qualified workers
	Maintain molded-case circuit breakers in motor control center applications
	Maintain batteries
	Test and adjust auxiliary and time delay relays
	Calibrate transducers and panel meters
	Apply Raychem products
	Install Grayboot connectors
	Perform Electrical Terminations (5kV or Less)
	Apply Low Voltage Raychem Products
	Maintain AC motors less than 100 horsepower
	Adjust Limitorque switches/verify proper operation
	Perform periodic inspection of Limitorque actuators
	Limitorque actuator refurbishment
I&C Maintenance	Read and interpret I&C drawings and publications
	Terminate Small Electrical Conductors
	Perform electrical soldering
	Fabricate, install, and maintain tubing runs using single ferrule compression, double ferrule compression, and flare fittings
	Maintain and calibrate general instrumentation
	Maintain water chemistry instrumentation
	Maintain air-operated positioners
	Maintain air-operated valve actuators
	Maintain air-operated valve accessories

Library of STEs	
Machinist	Operate lathe
	Operate milling machine
	Operate surface grinder
	Operate precision drill press
Mechanical Maintenance	Maintain overhead cranes
	General valve maintenance
	Maintain gate valves
	Maintain globe valves
	Maintain check valves
	Maintain diaphragm and ¼ turn valves (ball, plug, butterfly)
	Advanced valve maintenance
	Maintain control valves
	Maintain pressure seal valves
	Maintain safety and relief valves
	Repack a valve
	Maintain snubbers
	Align a shaft
	Perform laser alignment
	Maintain positive displacement, rotary-type pumps
	Maintain centrifugal pumps
	Maintain bearings
	Repack a pump
	Maintain air compressors
	Maintain drive couplings
	Maintain mechanical seals
	Maintain heat exchangers
	Maintain filters and strainers
	Use precision measuring and test equipment
	Fabricate gaskets
Pipefitter	Fabricate, modify, and install flanged and un-flanged spools of threaded pipe
	Fabricate, modify, and install flanged and un-flanged spools of welded piping systems

Library of STEs	
	Junior RP Technical Fundamentals
	Senior RP Technical Fundamentals
Radiation Protection	Work in a nuclear facility
	Operate Portable Radiological Survey Instruments
	Perform Radiation and Contamination Surveys
	Collect and Evaluate Radiological Air Samples
	Post Low Level Radiological Hazards
	Control Access to High Radiation Areas
	Monitor Personnel Contamination
	Control Radioactive Material Within an RCA
	Control HEPA Vacuums and Ventilation Equipment
	Perform Low Risk Radiological Job Coverage
	Radiological Posting of HRA, LHRA, & VHRA
	Control Access into a Locked High Radiation Area
	Unconditionally Release Personnel Following Valid Contamination Monitor Alarms
	Unconditionally Release Materials from an RCA
	Support Radiography Job Coverage
	Perform Medium and High Risk Radiological Job Cover
Welder	Perform basic structural welding
	Perform confined-space entry and attendance duties
	Demonstrate industrial safety techniques
	Perform foreign material exclusion activities
	Install and torque fasteners
	Install and maintain expansion anchors
	Perform standard rigging
	Operate an overhead crane
	Operate a forklift
	Operate overhead/underhung hoists
	Operate an aerial work platform
	Perform industrial rigging
	Perform signal person duties
	Perform standard rigging and signaling
	Perform industrial rigging and signaling
	Lift/land leads

	Erect and dismantle scaffolding
	Use fall protection equipment

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Notes:

1. Additional STEs are under development in mechanical, instrument & controls, and electric maintenance; radiation protection; chemistry; and engineering.
2. Please refer to EPRI.com to determine the dates and times in-person courses are offered.
3. Some of these courses are fee based. Please refer to EPRI.com to determine the cost.

EPRI'S SCHEDULED CLASSROOM COURSES

New courses are being added all the time. For the most up-to-date listing of scheduled classroom courses and a registration link, visit

Scheduled Classroom Training

THINGS TO COME

Improved Technology Transfer

EPRI is always striving to increase the effectiveness of our technology transfer. The global energy workforce includes an unprecedented number of new employees as countries expand and upgrade their generation, transmission, and distribution operations to meet changing demands. EPRI will expand our training offerings to assist stakeholders with quickly understanding and adopting our research results.

Increased Collaboration

Training provides not only an opportunity for individuals to learn highly technical and complex information, but it also provides the opportunity for students to meet and ask questions of researchers and global industry experts. EPRI's unique global membership allows training participants the opportunity to expand their professional networks by networking with the other participants in EPRI's courses.

Advancing Training Delivery

EPRI established a Training Department in 2017 to help our world class researchers with course instructional design, development and execution. This new department is helping our experts update previous training offerings while expanding into areas that are most important to our stakeholders.

Learning Management System

The first training resource EPRI is adding to its portfolio is a Learning Management System (LMS). EPRI will continue to offer classroom training, but the LMS will allow us to add additional computer-based and distance learning courses. These additional formats are often more efficient as they reduce the need for travel and more time. The LMS will also provide individuals a central location to identify and register for all EPRI training and a repository for training records.

Expanded Training Offerings

EPRI's training offerings are dynamic. New courses will be added as they become available. Please check epri.com for an updated list.

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The Electric Power Research Institute, Inc. (EPRI, www.epri.com) conducts research and development relating to the generation, delivery and use of electricity for the benefit of the public. An independent, nonprofit organization, EPRI brings together its scientists and engineers as well as experts from academia and industry to help address challenges in electricity, including reliability, efficiency, affordability, health, safety and the environment. EPRI members represent 90% of the electric utility revenue in the United States with international participation in 35 countries. EPRI's principal offices and laboratories are located in Palo Alto, Calif.; Charlotte, N.C.; Knoxville, Tenn.; and Lenox, Mass.

Together…Shaping the Future of Electricity

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