

# NERC Matrix 2012



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# NERC MATRIX

L&K International Training is recognized by the North American Electric Reliability Corporation as a continuing education provider who adheres to NERC Continuing Education Program Criteria.

**L&K International Online Power Training**  
Phone: 866-923-7297  
Web: <http://www.lkitraining.com>



## NERC ID/COURSE TITLE

NERC ID/COURSE TITLE	CE HOURS	OPS TOPICS	STANDARDS	SIMULATION	EO
LK_Intl_001_901_Power Plant Control Room Operator: Plant Control System	4	4	0	0	0
LK_Intl_001_902_Power Plant Control Room Operator: Circulating Water System	3	3	0	0	0
LK_Intl_001_903_Power Plant Control Room Operator: Condensate System	4.5	4.5	0	0	0
LK_Intl_001_904_Power Plant Control Room Operator: Feedwater System	4	4	0	0	0
LK_Intl_001_905_Power Plant Control Room Operator: Boiler Feed Pumps	2	2	0	0	0
LK_Intl_001_906_Power Plant Control Room Operator: Boiler Water and Steam System	2	2	0	0	0
LK_Intl_001_907_Power Plant Control Room Operator: Combustion Air and Flue Gas System	3	3	0	0	0
LK_Intl_001_908_Power Plant Control Room Operator: Boiler Fuel System	2.5	2.5	0	0	0
LK_Intl_001_909_Power Plant Control Room Operator: Air Pollution Control Systems	2	2	0	0	0
LK_Intl_001_910_Turbine Auxiliaries System Operation and Control	5	5	0	0	0
LK_Intl_001_911_Power Plant Control Room Operator: Generator and Auxiliaries System Operation and Control	4	4	0	0	0
LK_Intl_001_912_Power Plant Control Room Operator: Unit Integrated Startup and Shutdown	3	3	0	0	0
LK_Intl_001_913_Power Plant Control Room Operator: Efficient, Reliable and Environmentally Sensitive Operations	4	4	0	0	0
LK_Intl_001_914_Power Plant Control Room Operator: Abnormal Plant Conditions	2	2	0	0	0
LK_Intl_001_915_Power Plant Control Room Operator: Heat Rate Improvement	3	3	0	0	0
LK_Intl_001_1101_Grid Dynamics - Control Performance Compliance	4	4	4	0	4
LK_Intl_001_1102_Grid Dynamics - Emergency Operations	4	4	4	3	4
LK_Intl_001_1103_Grid Dynamics - High Voltage, Transmission, Safety, & Power System Ops	2	2	2	0	2
LK_Intl_001_1104_Grid Dynamics - Synchronizing Islands	2	2	2	0	2
LK_Intl_001_1105_Grid Dynamics - Undervoltage and Underfrequency	2	2	2	1	2
LK_Intl_001_1106_Grid Dynamics - Voltage Control	2	2	2	1	2
LK_Intl_001_2101_Elements of System Protection	4	4	0	0	0
LK_Intl_001_2102_Types of Protective Relays	4	4	0	0	0
LK_Intl_001_2103_Monitoring System Conditions	4	4	0	0	4
LK_Intl_001_2104_Fault Characteristics	4	4	0	0	0
LK_Intl_001_2105_Generator Protection	4	4	0	0	0
LK_Intl_001_2106_Transformer Protection	4	4	0	0	0
LK_Intl_001_2107_Bus Protection	4	4	0	0	0
LK_Intl_001_2108_Motor Protection	4	4	0	0	0
LK_Intl_001_2109_Line Protection	4	4	0	0	0
LK_Intl_001_2110_Pilot Protection	4	4	0	0	0
LK_Intl_001_2111_Protection for System Stability	4	4	0	0	4
LK_Intl_001_2112_Testing and Commissioning of Protective	4	4	0	0	0
LK_Intl_001_2113_Power Line Carriers	4	4	0	0	0
LK_Intl_001_2114_Fault Investigation and Analysis	4	4	0	0	0
LK_Intl_001_2115_Introduction to Static Relaying	4	4	0	0	0
LK_Intl_001_2116_Coordination of Protection Devices	4	4	0	0	0
LK_Intl_001_2117_Power Supply for Protection and Control	4	4	0	0	0
LK_Intl_001_2118_Energy Center Operations	4	4	0	0	4
LK_Intl_001_2119_Telecommunications Protection I - HVSP Devices	4	4	0	0	0
LK_Intl_001_2120_Telecommunications Protection II - Installation and Configuration	4	4	0	0	0
LK_Intl_001_2121_Supervisory Control System (SCADA)	4	4	0	0	0
LK_Intl_001_2122_Inadvertent Trips - Cause and Prevention	4	4	0	0	0
LK_Intl_001_2123_Fault Calculations and Relay Settings	4	4	0	0	0
LK_Intl_001_2124_Testing Techniques	4	4	0	0	0
LK_Intl_001_2125_Programmable Logic Controllers	4	4	0	0	0
LK_Intl_001_2501_Gas Turbine Major Components Design & Construction	2	2	0	0	0
LK_Intl_001_2502_Gas Turbine Support Systems	2	2	0	0	0
LK_Intl_001_2503_Operation of Gas Turbines	4	4	0	0	0
LK_Intl_001_2504_Control and Protection Systems	4	4	0	0	0

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LK_Intl_001_2505_Aero-Derivative Gas Turbines	4	4	0	0	0
LK_Intl_001_2506_Gas Turbine Routine Maintenance	2	2	0	0	0
LK_Intl_001_2507_Gas Turbine Major Maintenance	2	2	0	0	0
LK_Intl_001_2508_Combined Cycle Operation	4	4	0	0	0
LK_Intl_001_2509_Gas Turbine HRSG	2	2	0	0	0
LK_Intl_001_2510_Gas Turbine Generator & Electrical Systems	2	2	0	0	0
LK_Intl_001_2701_The Hydro-Electric Role in the Power System	4	4	0	0	0
LK_Intl_001_2702_Hydro Power Stations	4	4	0	0	0
LK_Intl_001_2703_Water Management	4	4	0	0	0
LK_Intl_001_2704_Hydro Turbines	1.5	1.5	0	0	0
LK_Intl_001_2705_Turbine Monitoring and Control	4	4	0	0	0
LK_Intl_001_2706_The Hydro Generator	4	4	0	0	0
LK_Intl_001_2707_Generator Monitoring and Control	2	2	0	0	0
LK_Intl_001_2708_Hydro Plant Auxiliaries	1.5	1.5	0	0	0
LK_Intl_001_2709_Operation of Electrical Equipment	4	4	0	0	0
LK_Intl_001_2710_Hydro Plant Operation and Maintenance	2	2	0	0	0
LK_Intl_001_7101_Basic Electricity	2	2	0	0	0
LK_Intl_001_7102_Properties of AC Circuits	2	2	0	0	0
LK_Intl_001_7103_Power and Power Factor	2	2	0	0	0
LK_Intl_001_7104_Three Phase Systems	2	2	0	0	0
LK_Intl_001_7501_Review of Fundamentals	4	4	0	0	0
LK_Intl_001_7502_Power Transmission	4	4	0	0	0
LK_Intl_001_7503_System Voltage Control	4	4	0	0	4
LK_Intl_001_7504_System Frequency and Tie-Line Control	4	4	0	0	4
LK_Intl_001_7505_Power Dispatching	4	4	0	0	0
LK_Intl_001_7506_System Security	4	4	0	0	2
LK_Intl_001_7507_Operating Under Abnormal Conditions	4	4	0	0	4
LK_Intl_001_7508_System Restoration	4	4	0	0	4
LK_Intl_001_7509_Monitoring and Control Communications	4	4	0	0	0
LK_Intl_001_7510_Transmission System Protection	4	4	0	0	0
LK_Intl_001_7511_The Effect of Deregulation on System Operations	4	4	0	0	0
LK_Intl_001_7512_Power Dispatch Under Deregulation	4	4	0	0	0
LK_Intl_001_7513_Transmission Control	4	4	0	0	0
LK_Intl_001_7514_Controlling to NERC Standards: Interconnection Operation	4	4	4	0	0
LK_Intl_001_7515_Transmission Operations 101 Monitor, Assess, Respond	2	0	1	1	0
LK_Intl_001_7516_Controlling to NERC Standards: Generation Control and Performance	4	4	4	0	4
LK_Intl_001_7517_Controlling to NERC Standards: Aspects of System Operations	4	4	4	0	4
LK_Intl_001_7518_Controlling to NERC Standards: Power System Transactions and Coordination	4	4	4	0	0
LK_Intl_001_7519_Bulk Electric System Restoration I	2	0	1	1	0
LK_Intl_001_7701_Plant Maintenance for Operations: Maintenance Management	4	4	0	0	0
LK_Intl_001_7702_Plant Maintenance for Operations: On-Line Condition Monitoring	4	4	0	0	0
LK_Intl_001_7703_Plant Maintenance for Operations: Vibration Monitoring	4	4	0	0	0
LK_Intl_001_7704_Plant Maintenance for Operations: Non-Destructive Examination	4	4	0	0	0
LK_Intl_001_7705_Condition Monitoring - Electrical Testing I & II (CD-ROM Only)	1.5	1.5	0	0	0
LK_Intl_001_7706_Liquid Analysis (CD-ROM Only)	1.5	1.5	0	0	0
LK_Intl_001_7801_Fundamentals of Power plant Efficiency I	4	4	0	0	0
LK_Intl_001_7802_Fundamentals of Power plant Efficiency II	4	4	0	0	0
LK_Intl_001_7803_Factors Affecting Boiler Efficiency	2	2	0	0	0
LK_Intl_001_7804_Operator Controllable Losses - Boiler	2	2	0	0	0
LK_Intl_001_7805_Factors Affecting Turbine Cycle Efficiency	2	2	0	0	0

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LK_Intl_001_7806_Operator Controllable Losses - Turbine Cycle	2	2	0	0	0
LK_Intl_001_7807_Balance of Plant Operation	2	2	0	0	0
LK_Intl_001_7808_Power Plant Control	3	3	0	0	0
LK_Intl_001_7809_Case Studies I	4	4	0	0	0
LK_Intl_001_8001_AC Voltage Generation	2	2	0	0	0
LK_Intl_001_8002_Power Factor	2	2	0	0	0
LK_Intl_001_8003_Impedance and Voltage Drop	2	2	0	0	0
LK_Intl_001_8004_Three Phase Power Systems	2	2	0	0	0
LK_Intl_001_8005_System Layout	2	2	0	0	0
LK_Intl_001_8006_Overhead Lines	2	2	0	0	0
LK_Intl_001_8007_Underground Distribution Systems	2	2	0	0	0
LK_Intl_001_8008_Substations	2	2	0	0	0
LK_Intl_001_8009_Distributed Generation	2	2	0	0	0
LK_Intl_001_8010_Substation Transformers	2	2	0	0	0
LK_Intl_001_8011_Distribution Transformers	2	2	0	0	0
LK_Intl_001_8012_Fault Interrupting Devices	2	2	0	0	0
LK_Intl_001_8013_Non-fault Interrupting Devices	2	2	0	0	0
LK_Intl_001_8014_Voltage Control Devices	2	2	0	0	0
LK_Intl_001_8015_Fundamentals of Protection	2	2	0	0	0
LK_Intl_001_8016_Overcurrent Protection	2	2	0	0	0
LK_Intl_001_8017_Differential Protection	2	2	0	0	0
LK_Intl_001_8018_Coordination of Protection Devices	2	2	0	0	0
LK_Intl_001_8019_Overvoltage Protection	2	2	0	0	0
LK_Intl_001_8020_Communication Techniques	2	2	0	0	0
LK_Intl_001_8021_SCADA Systems	2	2	0	0	0
LK_Intl_001_8022_Distribution Automation	2	2	0	0	0
LK_Intl_001_8023_Programmable Logic Controllers	2	2	0	0	0
LK_Intl_001_8024_Personnel Safety	2	2	0	0	0
LK_Intl_001_8025_Insulation Testing	2	2	0	0	0
LK_Intl_001_8026_Rotating Equipment Maintenance	2	2	0	0	0
LK_Intl_001_8027_Transformer Maintenance	2	2	0	0	0
LK_Intl_001_8028_Switchgear Maintenance	2	2	0	0	0
LK_Intl_001_8029_Line Maintenance	2	2	0	0	0
LK_Intl_001_8030_Maintenance Management	2	2	0	0	0
LK_Intl_001_8031_Load Characteristics and Utilization	2	2	0	0	0
LK_Intl_001_8032_Demand Management	2	2	0	0	0
LK_Intl_001_8033_Metering	2	2	0	0	0
LK_Intl_001_8034_Utility Rate Structure	2	2	0	0	0
LK_Intl_001_8035_The Effects of Deregulation and Competition	2	2	0	0	0
LK_Intl_001_8036_Power Quality	2	2	0	0	0
LK_Intl_001_8037_Function of the Operator	2	2	0	0	0
LK_Intl_001_8038_Abnormal Operating Conditions	2	2	0	0	0
LK_Intl_001_8039_Dealing with Service Interruptions	2	2	0	0	0
LK_Intl_001_9100_Applying NERC Standards	18	18	18	0	0
LK_Intl_001_9200_Blackout 2003 - A Lesson in Emergency Preparedness	2	2	0	1	0
LK_Intl_001_9300_NERC Compliance Awareness	1	1	1	0	0
LK_Intl_001_9400_NERC Standard_PER-005	1	1	1	0	0
LK_Intl_001_9500_Emergency Table Top Drill	15	15	2	15	15
LK_Intl_001_9900_System Operations Review	12	12	4	0	8

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