NANTeL Industry Training Course Catalog

- Industrial Safety
- Human Performance
- Industry Portable Qualifications
- EPRI Engineering Fundamentals & STEs
- Advanced Engineering Training
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LEGEND

The course has audio components.

The course has an exam associated with it.

The course has an acknowledgement statement. A proctor’s presence is not required to complete an acknowledgement.

The course is newly released on NANTeL.

The course is designated as an industry “Hard Hat Ready” course.
GENERIC ADVANCED FLEX TRAINING

Description: This course is intended for use by ERO decision-makers. It provides additional information on implementing the FLEX strategies related to the equipment and acquisition of FLEX equipment from regional resource centers as well as other resources. It also includes information for managers on minimizing worker stress during events and methods to assist decision-makers with problem-solving and decision-making under stress. There is a formal exam with this course and a classroom component.

Estimated Completion Time: 45 minutes

GENERIC ALPHA MONITORING AND CONTROL FOR RP TECHNICIAN TRAINING

Description: This course covers fundamentals of alpha radiation, characterization of alpha hazards, and work controls and monitoring as they apply to the radiation protection technician. It is intended to be used in conjunction with site programs, procedures, and processes to protect workers from unintended exposure to alpha hazards. A twenty question proctored exam is also required for completion of the certification.

Requal: Determined by Utility

Estimated Completion Time: 1 hour

GENERIC ASBESTOS AWARENESS

Description: This is a generic awareness level course for the general employee. Upon completion of this training, students will gain a general awareness of asbestos, the risks, and the regulatory requirements for protecting employees. Students will learn the actions to be followed to minimize the risk of asbestos exposure. This course does not qualify to students to perform asbestos abatement activities. If any abatement of asbestos is required, workers will require additional training.

Requal: Determined by Utility

Estimated Completion Time: 30 minutes

GENERIC AWARENESS

Description: This course is intended for workers at nuclear sites to make you aware of your role in protecting the environment and ensuring the health and safety of all workers. Students will learn about: safety conscious work environment (SCWE), stormwater pollution prevention (SWPP), spill prevention and control, hearing conservation, emergency plan, and fire extinguishers.

Requal: Determined by Utility

Estimated Completion Time: 30 minutes
**GENERIC BASIC FLEX INITIAL TRAINING**

**Description:** This course is intended for use by ERO members as part of the roll-out of the FLEX strategies industry-wide. It provides the students with a familiarization of why FLEX is being implemented, how FLEX is used to protect stations against beyond-design-basis events like that at Fukushima and how implementing FLEX will mitigate or prevent conditions experienced by workers at Fukushima. There is no formal exam with this course.

**Estimated Completion Time:** 45 minutes

**GENERIC BASICS FOR PROTECTION OF SAFEGUARDS INFORMATION**

**Description:** The student will learn basic responsibilities of a person with access to Safeguards Information (SGI) materials, how to protect and handle SGI, as well as what to do after access is no longer needed.

**Requal:** Determined by Utility

**Estimated Completion Time:** 30 minutes

**GENERIC CONFINED SPACE**

**Description:** Upon completion of this training, students will understand the requirements for working in a confined space and be able to recognize the associated hazards and risks. For all workers, utility and supplemental, who may be assigned to a task involving work in a confined space.

**Requal:** Determined by Utility

**Estimated Completion Time:** 30 minutes

**GENERIC CYBER SECURITY ASSESSMENT TEAM**

**Description:** Nuclear technology is recognized as special and unique. Special attention is given to the design, maintenance, operation, and security of nuclear plants to ensure the safety of the systems, workers, and the public. The average person thinks of nuclear security in terms of walls, barbed wire, and security officers. Most people don’t realize that cyber security is also an important part of the security program.

**Requal:** Determined by Utility

**Estimated Course Completion Time:** 50 minutes

**GENERIC CYBER SECURITY AWARENESS**

**Description:** Cyber Security Awareness training is designed to increase an individual’s sensitivity to cyber threats and vulnerabilities, and their recognition of the need to protect data and information. Individual users must understand their responsibility for adherence of applicable policies and standards.

**Requal:** Determined by Utility

**Estimated Completion Time:** 50 minutes
GENERIC CYBER SECURITY TECHNICAL TRAINING FOR DESIGN ENGINEERING

Description: This training provides an overview of how cyber security attributes affect design changes, equivalencies, and technical evaluations supporting procurement. This training also addresses when it is necessary to involve a cyber-security specialist.

Requal: Determined by Utility

Estimated Completion Time: 1 hour

GENERIC CYBER SECURITY TECHNICAL TRAINING FOR MAINTENANCE

Description: Maintenance personnel need to be aware of cyber security practices and procedures and understand the actions to take when working with digital equipment. This includes both installed plant equipment and portable media and equipment. The main idea is to ensure that cyber security controls are intact and evaluated during and after maintenance activities.

Requal: Determined by Utility

Estimated Completion Time: 1 hour

GENERIC CYBER SECURITY TECHNICAL TRAINING FOR OPERATIONS

Description: As an operator, cyber security will be part of your daily activities. Operations personnel need to be aware of cyber security practices, procedures, and technologies for Critical Digital Assets (CDAs) they may encounter. All work performed on digital systems or CDAs should identify cyber security impacts and document cyber security requirements.

Requal: Determined by Utility

Estimated Completion Time: 1 hour

GENERIC CYBER SECURITY TECHNICAL TRAINING FOR SYSTEM OWNERS

Description: As a system engineer or system owner, you will have to apply cyber security practices as part of your daily activities. When an activity you are performing involves a digital component, or software, you need to think about cyber security requirements.

Requal: Determined by Utility

Estimated Completion Time: 1 hour

GENERIC EP CONTROLLER TRAINING

Description: Generic EP Controller Training covers the basics for personnel who will be performing the job of an EP Controller/Evaluator during an emergency drill. It is used in conjunction with site-specific training by each utility.

Requal: Determined by Utility

Estimated Completion Time: 1 hour
**GENERIC ELECTRICAL SAFETY FOR NON-QUALIFIED WORKERS**

**Description:** Upon completion of this training, students will be able to recognize electrical safety hazards that may be encountered by non-qualified workers and the actions to be followed to minimize these hazards. This course is intended as information that will assist unqualified electrical workers when working around electrical equipment typically found at nuclear power plants. This course does not qualify workers to work with energized electrical equipment.

**Requal:** Determined by Utility

**Estimated Completion Time:** 30 minutes

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**GENERIC ELECTRICAL SAFETY OVERVIEW TRAINING**

**Description:** This training covers basic electrical safety practices. Utilities may incorporate the course in a manner they see fit. Completing this training does not authorize the employee to perform any specific electrical task.

**Requal:** Determined by Utility

**Estimated Completion Time:** 1 hour

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**GENERIC FALL PROTECTION**

**Description:** Upon completion of this training, students will be able to recognize fall hazards and the actions to be followed to minimize these hazards. Audience is personnel who might be exposed to fall hazards must be aware of the associated hazards and the requirements for use of fall protection. This generic course is intended for power plant workers who may be required to work at heights (generally defined as 6 feet or more).

**Requal:** Determined by Utility

**Estimated Completion Time:** 1 hour

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**GENERIC FATIGUE ASSESSMENT TRAINING**

**Description:** NANTeL Fatigue Assessment Training was designed by INPO’s National Academy for Nuclear Training e-Learning Department (NANTeL) to help individuals recognize fatigue by becoming familiar with the effects, precursors, and prevention techniques associated with fatigue. Using this knowledge, individuals will be able to take appropriate actions to maintain a safe work environment.

**Requal:** Determined by Utility

**Estimated Completion Time:** 1.5 hours
GENERIC FITNESS-FOR-DUTY AND BEHAVIORAL OBSERVATION

Description: Each nuclear utility is required to establish a Fitness-for-Duty (FFD) program. Everyone with unescorted access to the Protected Area of the plant must be trained on this program and re-tested yearly. Others who don’t access the Protected Area but who staff emergency response facilities and FFD Program Personnel must also be trained. This lesson covers the importance of being fit for duty and what is expected of you as part of the program. Specifically, you will learn about the factors that affect fitness-for-duty; the potential consequences of substance abuse; the chemical testing process; and how to identify and respond to behavioral problems.

Requal: 1 year

Estimated Completion Time: 1.5 hours

GENERIC FOREIGN MATERIAL EXCLUSION

Description: This course will help you identify and use basic Foreign Material Exclusion (FME) work practices so you can prevent foreign material from entering plant equipment and systems. The training incorporates essential elements of INPO IER 19-6 “Preventing Debris-Induced Fuel Failures” as it relates to foreign material exclusion programs and activities.

Requal: Determined by Utility

Estimated Completion Time: 1 hour

GENERIC FOREIGN MATERIAL EXCLUSION MONITOR

Description: This course is to be taken upon completion of the Generic FME course in order to obtain the additional knowledge you need in order to be an FME monitor. FME monitors are responsible for understanding and ensuring that the requirements of Foreign Material Exclusion Zones are implemented.

Requal: Determined by Utility

Estimated Completion Time: 1 hour

GENERIC HEARING CONSERVATION

Description: This training is designed to meet the OSHA training requirements for general industry and construction standards on occupational noise exposure. It is part of your company’s hearing conservation program.

Requal: Determined by Utility

Estimated Completion Time: 30 minutes
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<th>Course</th>
<th>Description</th>
<th>Requal</th>
<th>Estimated Completion Time</th>
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<tr>
<td><strong>Generic Heat Stress</strong></td>
<td>This training is designed in accordance with NISP-IS-01 and is applicable for workers who work in temperatures that have the potential to cause injury or illness due to heat stress.</td>
<td>Determined by Utility</td>
<td>30 minutes</td>
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<tr>
<td><strong>Generic Hot Work Fire Watch</strong></td>
<td>Generic Hot Work Fire Watch provides students with the basic knowledge required to perform the duty of a hot work fire watch. It is used in conjunction with site specific training and a hands-on exercise with a fire extinguisher. Together these qualify the student to be a hot work fire watch.</td>
<td>Determined by Utility</td>
<td>1 hour</td>
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<tr>
<td><strong>Generic HU Full Collection</strong></td>
<td>This is a collection of all the individual HU courses. It was created to reduce administrative time by reducing the amount of certification needed to be assigned.</td>
<td>Determined by Utility</td>
<td>3.75 hours</td>
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<td><strong>Generic HU Briefings</strong></td>
<td>Briefing is a meeting of workers and supervisors conducted before or after performing a job to discuss the tasks involved, hazards and related precautions. It encourages interactive discussion among all involved individuals. Task Preview, Pre-Job Briefings, Post-Job Briefings, and Turnover are four human performance tools used to help us reduce the likelihood of human error and promote safe work performance at our stations. In this course you will learn more about these tools, why we use them, when we used them, how we used them, and practices to avoid while using these tools.</td>
<td>Determined by Utility</td>
<td>45 minutes</td>
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GENERIC HU COMMUNICATIONS

Description: Have you ever been in a situation in which someone thought they heard you say something that you did not? Have you ever thought you heard something that was not actually said? Of course you have. Communication has room for error. Three-way communication and phonetic alphabet are two human performance tools that are used to help us to minimize communication errors. In this course you will learn more about these tools, why we use them, when we use them, how we used them, and practices to avoid while using these tools.

Requal: Determined by Utility

Estimated Completion Time: 45 minutes

GENERIC HU PROCEDURE/WORK INSTRUCTION USE AND ADHERENCE

Description: Procedure/work instruction use and adherence means understanding the procedure’s intent and purpose and following its direction. Following procedure instruction uses and adherence and placekeeping are two human performance tools to help us minimize human errors. In this course you will learn more about these tools, why we use them, when we used them, how we used them, and practices to avoid while using these tools.

Requal: Determined by Utility

Estimated Completion Time: 45 minutes

GENERIC HU SITUATIONAL AWARENESS

Description: Being aware of our situation means clearly understanding the expectations for our task and job-site conditions and comparing them to what we actually encounter in the field. Questioning Attitude and Know When to Stop are two human performance tools that are used to help us maintain situational awareness through frequent questions, teamwork, and timely updates about current job conditions. You will learn more about these tools, why we use them, when we use them, how we use them, and practices to avoid while using these tools.

Requal: Determined by Utility

Estimated Completion Time: 45 minutes

GENERIC HU VERIFICATION TECHNIQUES

Description: A verification practice refers broadly to four methods (tools) of verification: self-checking peer-checking, concurrent verification and independent verification. The tool used is determined by the importance and potential for immediate consequences. In this course you will learn more about these tools, why we use them, when we used them, how we used them and practices to avoid while using these tools.

Requal: Determined by Utility

Estimated Completion Time: 45 minutes
GENERIC INPO SOER 02-4

Description: This course describes the causes of the Davis-Besse reactor vessel head degradation event. The course covers the generic training elements of Recommendation 1 in the SOER, including the technical causes and organizational contributors to the event and key lessons learned.

Requal: Determined by Utility

Estimated Completion Time: 30 minutes

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GENERIC LEAD AWARENESS

Description: This is a generic awareness level course for the general employee. It is not intended for personnel who will be working directly with lead or in posted areas. If any abatement of lead is required, workers will require additional training. Upon completion of this training, students will gain a general awareness of lead, the risks, and the regulatory requirements for protecting employees who work with lead. Students will learn the actions to be followed to minimize the risk of lead exposure.

Requal: Determined by Utility

Estimated Completion Time: 30 minutes

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GENERIC MATERIAL HANDLING

Description: The goal of this course will be to provide awareness training for risks and hazards associated with handling of non-suspended loads. The student will understand general use material handling equipment. After completing the web based Material Handling training, students will have met the training recommendations for material handling activities of SOER 06-1, excluding any site specific information or practical exercises.

Requal: Determined by Utility

Estimated Completion Time: 30 minutes

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GENERIC PLANT ACCESS TRAINING

Description: This lesson provides general information that workers need to prepare for work at a nuclear power plant. It describes how a nuclear station operates, what is expected of each individual, and how to work safely at all times.

Requal: 1 year

Estimated Completion Time: 1.5 hours
**GENERIC RADIATION WORKER TRAINING**

**Description:** This lesson provides general information that workers need to prepare for work in radiologically controlled areas of a nuclear power plant. It describes radiation and contamination, including their health effects, how they are created, how they are controlled and measured, and how to work safely in areas where they are found. The training material meets the National Academy for Nuclear Training’s generic objective for training of all radiation workers according to ACAD 00-007, “Guidelines for Radiation Worker and Radiological Respiratory Protection Training.” Individual stations must supplement this generic training with additional site-specific training as required by ACAD 00-007.

**Requal:** 1 year

**Estimated Completion Time:** 4 hours

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**GENERIC RESPIRATORY PROTECTION**

**Description:** Upon completion of this training, students will understand the requirements for wearing a respirator for protection against airborne materials.

**Requal:** 1 year

**Estimated Completion Time:** 1 hour

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**GENERIC RESPIRABLE CRYSTALLINE SILICA**

**Description:** This course discusses the source and health implications associated with respirable crystalline silica (RCS) along with programs and methods to reduce personnel exposure. It also provides an overview of the OSHA requirements for exposure to respirable crystalline silica. 29 CFR Parts 1910, 1915 and 1926 for Occupational Exposure to Respirable Crystalline Silica are required to be implemented by June 23rd 2017.

**Requal:** Determined by Utility

**Estimated Completion Time:** 40 minutes

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**GENERIC RIGGING AND LIFTING FOR SUPERVISORS**

**Description:** Upon completion of this course the student will be able to demonstrate a fundamental knowledge of basic rigging hardware use and inspection criteria, identify key elements of the lift process, and understand historical trends of rigging and lifting events and weaknesses.

**Requal:** Determined by Utility

**Estimated Completion Time:** 1 hour
**GENERIC SCAFFOLD SAFETY**

**Description:** The course teaches students about the basics of working safely on scaffolds. Students learn about basic assembly requirements; inspection requirements and types of inspection tags; fall hazards; electrical hazards; and safe work practices. Note: The course does not qualify students as scaffold erectors.

**Requal:** Determined by Utility

**Estimated Completion Time:** 1 hour

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**GENERIC SCAFFOLD INSPECTION**

**Description:** The course teaches students about the basics of working safely on scaffolds AND qualifies them to inspect scaffolds. Students learn about basic assembly requirements; inspection requirements and types of inspection tags; fall hazards; electrical hazards; and safe work practices. Note: The course does not qualify students as scaffold erectors.

**Requal:** Determined by Utility

**Estimated Completion Time:** 1 hour

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**INPO ADVANCING PROFICIENCY**

**Description:** This course is intended communicate INPO’s understanding of the fundamentals of workforce proficiency, including the unique aspects of team proficiency.

**Estimated Completion Time:** 40 minutes

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**INPO 18-003 MAINTENANCE FUNDAMENTALS AND TECHNICAL SKILLS INTRODUCTION**

**Description:** This course provides standardized introductory training for the INPO 18-003 Maintenance Fundamentals and Technical Skills guideline. The training is recommended for utility and supplemental personnel who perform maintenance at a nuclear site. It is designed to orient the learner to the Maintenance Excellence model and the associated concepts as outlined in INPO 18-003. The ultimate goal of the training is to aid in the improvement and sustainability of proficiency in maintenance fundamentals and the corresponding discipline area technical skills.

**Requal:** Determined by Utility

**Estimated Completion Time:** 30 minutes
INPO 18-003 MAINTENANCE FUNDAMENTALS AND TECHNICAL SKILLS – FIELD SCENARIO - ELECTRICAL

Description: This course is designed to follow the Maintenance Fundamentals and Technical Skills – Introduction training certification. This course provides a practical factors style training course for the INPO 18-003 Maintenance Fundamentals and Technical Skills guideline. The training is recommended for utility and supplemental personnel who perform electrical maintenance tasks at a nuclear site. It is designed to exercise and reinforce student proficiency and promote engaged thinking skills to solve problems and avoid poor decision making.

Requal: Determined by Utility

Estimated Completion Time: 30 minutes

INPO 18-003 MAINTENANCE FUNDAMENTALS AND TECHNICAL SKILLS – FIELD SCENARIO - I&C

Description: This course is designed to follow the Maintenance Fundamentals and Technical Skills – Introduction training certification. This course provides a practical factors style training course for the INPO 18-003 Maintenance Fundamentals and Technical Skills guideline. The training is recommended for utility and supplemental personnel who perform I&C maintenance tasks at a nuclear site. It is designed to exercise and reinforce student proficiency and promote engaged thinking skills to solve problems and avoid poor decision making.

Requal: Determined by Utility

Estimated Completion Time: 30 minutes

INPO 18-003 MAINTENANCE FUNDAMENTALS AND TECHNICAL SKILLS – FIELD SCENARIO - MECHANICAL

Description: This course is designed to follow the Maintenance Fundamentals and Technical Skills – Introduction training certification. This course provides a practical factors style training course for the INPO 18-003 Maintenance Fundamentals and Technical Skills guideline. The training is recommended for utility and supplemental personnel who perform mechanical maintenance tasks at a nuclear site. It is designed to exercise and reinforce student proficiency and promote engaged thinking skills to solve problems and avoid poor decision making.

Requal: Determined by Utility

Estimated Completion Time: 30 minutes
INPO IPEER (INDUSTRY PEER OBSERVATIONS AND INTERVIEWS)

Description: This course is intended to be completed by industry personnel who are participating as a peer evaluator on an INPO or WANO plant evaluation. It is expected that each peer evaluator will complete this lesson before arriving at the INPO offices in Atlanta for sequester week of the evaluation. By completing this lesson ahead of time, more time can be dedicated to investigation into your focus area during sequester.

Estimated Completion Time: 45 minutes

INTRODUCTION TO NEIL

Description: This course provides an overview of the Nuclear Electric insurance Limited (NEIL) organization. Included in the course is a historical backdrop of NEIL, general operations, types of policies, current loss control standards, evaluation processes and new loss prevention initiatives. This course is developed and provided to NANTeL by the NEIL organization.

Estimated Completion Time: 40 minutes

NUCLEAR CITIZENSHIP

Description: In this course, many of the lessons learned from nuclear industry events are presented to the learner in order to help them understand the importance of their role at the plant. This training is primarily for utility workers who are new to nuclear.

Estimated Completion Time: 1.5 hours

NANTEL ADMINISTRATOR TRAINING

Description: This course provides information about NANTeL policies and describes administrator functions. You will also learn the responsibilities of being a NANTeL proctor. When you are done with this course you will be able to independently perform the functions of a NANTeL administrator.

Requal: 1 year

Estimated Completion Time: 1.5 hours

NANTEL PROCTORING RESPONSIBILITIES

Description: This course describes proctor duties as well as NANTeL examination rules that need to be followed during every exam administration. After completion of this course, you will be able to describe the functions of a qualified proctor, determine what steps to take upon student exam completion, and answer student questions about the exam process.

Requal: 1 year

Estimated Completion Time: 45 minutes
NUCLEAR CITIZENSHIP FOR CONTRACT WORKERS

Description: In this course, many of the lessons learned from nuclear industry events are presented to the learner in order to help them understand the importance of their role at the plant. This training is primarily for contract workers who are new to nuclear.

Estimated Completion Time: 1.5 hours

NUCLEAR CITIZENSHIP FOR NEW CONSTRUCTION WORKERS

Description: In this course, many of the lessons learned from nuclear industry events are presented to the learner in order to help them understand the importance of their role at the plant. This training is primarily for contract workers who are new to nuclear.

Estimated Completion Time: 1.5 hours

BWR SEVERE ACCIDENT MITIGATION GUIDELINES (SAMG)

Description: This BWROG Emergency Procedures Committee (EPC) has designed and developed a Computer Based Training (CBT) for Rev 4 of the Severe Accident and Technical Support Guidelines (SAMG). The CBT was developed using the Systematic Approach to Training and parallels similar PWROG SAMG generic training to provide fleet wide SAMG training.

The BWR SAMG series will consists of certifications and training modules addressing the initial and requalification training for 4 job roles (Licensed Implementor, Non-licensed Implementor, Evaluator and Decision Maker) and 2 design categories (Mark I/II Containments and Mark III Containments).

Certification Titles

- BWRSAMG Decision Maker Mark I & II Cert
- BWRSAMG Decision Maker Mark III Cert
- BWRSAMG Evaluator Mark I & II Cert
- BWRSAMG Implementor (Licensed) Mark I & II Cert
- BWRSAMG Implementor (Licensed) Mark III Cert
- BWRSAMG Implementor (Non-Licensed) Mark I & II Cert
- BWRSAMG Implementor (Non-Licensed Licensed) Mark III Cert
Description: This training series was designed and developed by Westinghouse for the PWR Owners Group and is applicable to utilities with PWR power plants. The SAMG training series consists of 7 categories with 7 certifications each – 49 certifications total. The 7 categories represent NSSS suppliers and containment design.

Categories and Prefix Identifier

- Babcock and Wilcox LL – BLL
- Babcock and Wilcox RL – BRL
- Combustion Engineering Type 1 – C-I
- Combustion Engineering Type 2 (Systems 80) – C-II
- Westinghouse IC (Ice condenser) – ICC
- Westinghouse Type 1 – W-I
- Westinghouse Type 2 – W-II

Certification Titles and Courses:

The 7 certifications within each category have the following root titles:

- Licensed Implementor SAMG Initial Training Cert
- Licensed Operator SAMG Requal Training Cert
- Non-Licensed Implementor SAMG Initial Training Cert
- SAMG Evaluator Initial Training Cert
- SAMG Evaluator Requal Training Cert
- UDM SAMG Initial Training Cert
- UDM SAMG Requal Training Cert

Note that each certification title starts with a category prefix. For example “BLL - Licensed Implementor SAMG Initial Training Cert” would be the complete certification title in NANTel.

SUPPLEMENTAL RP TECHNICIAN CONTINUING TRAINING 2019

Description: 2019 continuing training topics for Supplemental Radiation Protection Technicians. The topics change each year. To be qualified, RP technicians must complete the current year’s training as well as the previous 2 years training (if they exist). These started in 2019 and the collection will grow each year.

SUPPLEMENTAL RP TECHNICIAN CONTINUING TRAINING 2020

Description: 2020 continuing training topics for Supplemental Radiation Protection Technicians. The topics change each year. To be qualified, RP technicians must complete the current year’s training as well as the previous 2 years training. These started in 2019 and the collection will grow each year.
<table>
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<tr>
<th>Course Title</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>SUPPLEMENTAL RP TECHNICIAN CONTINUING TRAINING 2021</strong></td>
<td>2021 continuing training topics for Supplemental Radiation Protection Technicians. The topics change each year. To be qualified, RP technicians must complete the current year’s training as well as the previous 2 years training. These started in 2019 and the collection will grow each year.</td>
</tr>
<tr>
<td><strong>SUPPLEMENTAL RP TECHNICIAN CONTINUING TRAINING 2022</strong></td>
<td>2022 continuing training topics for Supplemental Radiation Protection Technicians. The topics change each year. To be qualified, RP technicians must complete the current year’s training as well as the previous 2 years training. These started in 2019 and the collection will grow each year.</td>
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<td><strong>ADVANCED ENGINEERING TRAINING ACCIDENT DOSE CONSEQUENCES</strong></td>
<td>This course provides training for the site subject matter experts (SMEs) on the overall purpose, terminology and objectives of Dose Consequence Assessment for postulated accidents. The course discusses key parameters (inputs, assumptions, methodology design features and acceptance criteria) for assessment of various types of hypothetical accidents for both PWR and BWR sites (e.g., rod ejection or rod drop accidents, main steam line or reactor coolant failures, fuel handling, etc.). The course will enable the engineer to evaluate and respond to regulatory or industry issues as the site subject matter expert.</td>
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<td><strong>ADVANCED ENGINEERING TRAINING AS-BUILT PIPING ANALYSIS</strong></td>
<td>This course provides the engineering specialists with the generic design and licensing basis for understanding as-built piping analysis. The course addresses key regulatory requirements, the key inputs to analysis (pipe, supports, (fixed, thermal, and other loads)) and considerations for engineering evaluation and response to industry and regulatory guidance.</td>
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<tr>
<td><strong>ADVANCED ENGINEERING TRAINING ANTICIPATED TRANSIENTS WITHOUT SCRAM (ATWS)</strong></td>
<td>This course provides a comprehensive, nuclear industry generic overview of the Anticipated Transients Without Scram (ATWS) Rule. The primary learning objective is to know about the background of the AWTS Rule, key aspects of the Transients and PRA Analysis in relation to both Pressurized Water Reactors (PWR) and Boiling Water Reactors (BWR) designs.</td>
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ADVANCED ENGINEERING TRAINING AUX POWER SYSTEM DESIGN BASIS

Description: This course is a comprehensive, nuclear industry generic overview of Auxiliary Power Systems Design Basis. The primary learning objective is for the trainee to become familiar with the design basis of nuclear power station Aux Power Systems, major equipment, such as buses and circuit breakers, medium voltage equipment, key aspects of system logic, and important design documents applicable to both PWR and BWR designs.

ADVANCED ENGINEERING TRAINING AND CABLE AGING MANAGEMENT AND INACCESSIBLE CABLES

Description: This course provides an overview of the electrical cable degradation for inaccessible and difficult to access cables. The training will provide generic design and licensing basis for understanding cable material and construction and how these degrade over time and with exposure to the elements. The engineer will learn identification of key attributes, walk down and evaluation criteria and proper testing criteria.

ADVANCED ENGINEERING TRAINING CONTROL OF HEAVY LOADS

Description: This course provides a comprehensive overview of both the background and current requirements for the Control of Heavy Loads applicable to nuclear power stations. The primary learning objective is for the trainee to become familiar with the design basis for nuclear power station Control of Heavy Loads, related major equipment such as cranes, hoists, rigging equipment, and important design documents applicable to both PWR and BWR designs.

ADVANCED ENGINEERING TRAINING CONTROL ROOM HABITABILITY

Description: This course provides a comprehensive, nuclear industry generic overview of Control Room Habitability. The primary learning objective is to describe the regulatory basis, key design features, and testing related to Control Room Habitability.

ADVANCED ENGINEERING TRAINING CORE DESIGN

Description: This self-paced CBT addresses the purposes of core design, including economic, technical, and licensing aspects of core designs. It delves into the core design process from determining the plant requirements through developing fuel management guidelines to the key aspects of optimizing the creation of a reactor core.
ADVANCED ENGINEERING TRAINING DESIGN AND LICENSING BASIS

Description: This course is a comprehensive, nuclear industry generic overview of Design and Licensing Basis. The primary learning objective is for the trainee to become familiar with the technical background of and the regulatory requirements for the design and licensing basis of nuclear power stations. Information provided will be applicable to both PWR and BWR designs, will include details of key industry documents, typical documentation in place at nuclear sites and the interaction of design basis documentation with NRC commitments. The controls needed for updating the design and licensing basis for each nuclear site will also be presented.

ADVANCED ENGINEERING TRAINING EXTERNAL FLOODING

Description: This course is designed to provide the engineering basis for site flooding analysis as training for the site subject matter experts. The course defines key flooding terminology (PMP, LIP), identifies how the information is used in flooding analysis, and discusses the impacts of drains and dams and how to evaluate protective and other hazards associated with flooding. The site SME will gain understanding of flooding considerations and be able to perform assessments and engineering evaluations in response to industry and regulatory issues.

ADVANCED ENGINEERING TRAINING FIRE PROTECTION

Description: This course looks at fire protection as applied to commercial nuclear power plants in the United States. Fire protection impacts design, operation, maintenance, and training at a plant. The course attempts to address major issues in this complex and changing fire protection landscape.

ADVANCED ENGINEERING TRAINING FLEX

Description: This five-part CBT provides a detailed introduction to the Diverse and Flexible Coping Strategies (FLEX) initiative implementation at U.S. nuclear power plants and equips learners with an understanding of the context that led to FLEX strategies implementation as preventive and mitigation measures.

ADVANCED ENGINEERING TRAINING FUKUSHIMA OPERATOR RESPONSE

Description: This CBT explores the decisions and actions of the plant staff at Fukushima Daiichi and Fukushima Daini. The CBT is targeted for nuclear plant key managers, and identifies key gaps in technical decision making that has its roots in eroded staff technical competency. This CBT supports the nuclear industry’s Technical Competency improvement initiative.
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<tr>
<th>Course Title</th>
<th>Description</th>
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<tr>
<td>ADVANCED ENGINEERING TRAINING GAS MANAGEMENT</td>
<td>Description: This course is a comprehensive, nuclear industry generic overview of the Gas Management issues from NRC Generic Letter 2008-01. It includes design, surveillance, licensing, and operating experience related to gas management.</td>
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<tr>
<td>ADVANCED ENGINEERING TRAINING HIGH ENERGY LINE BREAK (HELB)</td>
<td>Description: This course provides design and licensing basis understanding of HELB/MELB for engineering evaluations and analysis. It introduces the student to the regulatory design requirements for HELB/MELB, explains the pipe rupture evaluation process and describes how to perform compartment heat-up and pressurization analysis. The course provides a generic foundation of HELB/MELB engineering analysis and considerations.</td>
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<tr>
<td>ADVANCED ENGINEERING TRAINING INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)</td>
<td>Description: This two-part CBT is a detailed, comprehensive, generic overview of the history, licensing, applicable regulations, design, and operational aspects of the dry spent fuel storage systems in use in the country today. The primary learning objective of this CBT is to provide students with an understanding of dry spent fuel storage system design and operational characteristics and address important licensing and regulatory topics and aging management actions.</td>
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<tr>
<td>ADVANCED ENGINEERING TRAINING LOCA GENERATED DEBRIS IMPACT ON ECCS SUCTION STRAINERS</td>
<td>Description: This course describes the resolution to generic safety concerns with the emergency core cooling system (ECCS) suction strainers due to debris generated by a loss of coolant accident (LOCA) for both PWRs and BWRs. It provides a comprehensive overview of the safety issues and the major analysis and testing steps that are taken to resolve the issues. In addition, it gives a summary of historical and ongoing regulatory requirements from the NRC on the performance for ECCS suction strainers and that actions taken by the industry to address the issues.</td>
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### ADVANCED ENGINEERING TRAINING MOLDED CASE CIRCUIT BREAKERS AND THERMAL OVERLOAD RELAYS

**Description:** This course provides the engineer with an understanding of the design, types, and purpose of these components in the nuclear environment. It addresses the specifics of design types, their operations, maintenance and testing of the components and regulatory requirements and considerations. The engineer for Molded Case Circuit Breakers and Thermal Overload Relays will have a generic design and licensing basis for performing engineering evaluations and responses to industry and regulatory issues.

### ADVANCED ENGINEERING TRAINING MOTOR OPERATED VALVE PROGRAM

**Description:** This course is a self-paced, comprehensive, nuclear industry generic overview of the Motor Operated Valve (MOV) Program. The training will provide generic design and licensing basis for understanding MOVs. The engineer will learn the specifics of MOV design types, modes of operation, maintenance and testing of MOVs, regulatory requirements, and considerations for performing engineering evaluations.

### ADVANCED ENGINEERING TRAINING PROTECTIVE RELAYS

**Description:** This course provides the design and licensing basis for understanding of protective relay selection and set point considerations. This course provides an understanding of the types and purpose of protective relays, the characteristics of the design, provides an understanding of both phase and ground protection and the protection requirements for different equipment (i.e., power transformers, generators, motor protection, etc.). The training provides the SME with the tools and skills necessary for engineering evaluations of protective relays to address industry and regulatory issues.

### ADVANCED ENGINEERING TRAINING SERVICE WATER SYSTEM MONITORING

**Description:** This CBT is a comprehensive, nuclear industry, generic overview of the NRC Generic Letter 89-13 Service Water Problems Affecting Safety-Related Equipment. The training will provide the students with the knowledge necessary to describe each of the five actions recommended by the NRC in GL 89-13 to provide technical support of heat exchanger inspection and tests related to the GL 89-13 program, and to determine guidance for inspection and testing of Service Water heat exchangers and components.
ADVANCED ENGINEERING TRAINING SET POINT METHODOLOGY

Description: This course addresses the generic design and licensing basis for understanding this topic and considerations for engineering evaluations and responses to industry and regulatory guidance. The course discusses key industry and regulatory documents, margin fundamentals, unique design features and uncertainty establishing set points. The engineer will have the basis for engineering evaluations and analysis of set points for addressing industry and regulatory issues as the site SME.

ADVANCED ENGINEERING TRAINING STANDARD DESIGN PROCESS

Description: This CBT is a detailed, comprehensive, nuclear industry generic overview of standard design change process. The primary learning objective of this CBT is for the trainee to become familiar and understand how to use the industry Standard Design Process (SDP) described in IP-ENG-001 to produce an Engineering Change (EC) package. In this module, the trainee will learn how to use a graded approach for selecting design change types such as Design Equivalent Package, Commercial Change Package, and Design Change Package.

ADVANCED ENGINEERING TRAINING STATION BLACKOUT

Description: This course is a detailed, comprehensive, nuclear industry generic overview of Station Blackout. The primary learning objective of this CBT is for the trainee to become familiar with the technical background of and the regulatory requirements for Station Black Out for nuclear power stations. Information provided will be applicable to both Pressurized Water Reactors (PWR) and Boiling Water Reactors (BWR) designs, include details of key industry documents, typical documentation in place at nuclear sites and the interaction of design basis documentation with NRC commitments.

ADVANCED ENGINEERING TRAINING SWITCHYARDS

Description: This course provides a through overview of the design and equipment considerations in the layout and purpose of switchyards. The comprehensive course includes a variety of switchyard types, their design (grading and drainage, structures, equipment (ring buss, double ring buss), protection (grounding, lightning, relays) and operation (communication, monitoring, security) and regulatory environment (NRC, NERC, FERC). The engineer learns the design and licensing basis requirements of switchyards that will enable him to response to industry and regulatory issues.
ADVANCED ENGINEERING TRAINING TORNADOES AND HURRICANES

**Description:** This course provides training for the site subject matter experts on the design considerations and the licensing basis topics necessary to assess and evaluate the tornado and hurricane forces on nuclear plants and structures. This will enable the student to understand and respond to industry and regulatory issues for tornadoes and hurricanes.

EPRI BURIED PIPE CONDITION ASSESSMENT AND REPAIR TRAINING 1

**Description:** This course covers initial direct condition assessment of excavated buried pipe. The intended audience is maintenance, engineering and on-site contractor personnel.

EPRI BURIED PIPE CONDITION ASSESSMENT AND REPAIR TRAINING 2

**Description:** This course covers buried pipe coating evaluations, repairs, and final as-left inspections of piping. The intended audience for Course 2 is PREQUALIFIED maintenance, engineering, and on-site contractor personnel. Someone who is prequalified has met the prerequisites set by the plant or utility to conduct buried pipe coatings evaluations, repairs, and replacements. These qualifications at a minimum must include having passed Course 1 of this Buried Pipe Condition Assessment and Repair Training.

EPRI COUNTERFEIT, FRAUDULENT, AND SUBSTANDARD ITEMS

**Description:** Counterfeit and fraudulent items (CFIs) pose an ongoing risk to the maintenance and operation of nuclear plants. Understanding what these items are, how to identify them, and how to keep them out of our plants and inventories is important to safety and generation. This course will introduce maintenance, warehouse, supply chain, and engineering staff to counterfeit and fraudulent items and some of the measures available to prevent them from being used.

EPRI E.F. BASIC NUCLEAR PHYSICS AND REACTOR THEORY

**Description:** The Basic Nuclear Physics and Reactor Theory module covers basic atomic structure, fission, radioactivity, reactor operation, and nuclear safety. This course will help new engineers understand how their work might impact reactor operations and nuclear safety. This module is intended for use as orientation training for new engineering support personnel.
EPRI E.F. CHEMISTRY

Description: The chemistry module covers basic terms and concepts as well as their applications in nuclear power plants. This course will help new engineers understand some of the basic processes and equipment that are critical to the operation of nuclear power plants, how their job might affect chemistry, and how information about chemistry might help them better perform their job. This module is intended for use as orientation training for new engineering support personnel.

EPRI E.F. CIVIL ENGINEERING

Description: This module of Engineering Fundamentals provides information about basic civil engineering terms and concepts in order to identify civil engineering-related design, materials, and safety considerations, as they relate to nuclear power plant employees. It is intended for use as orientation training of new engineering support personnel.

EPRI E.F. CORE PROTECTION

Description: This module provides a basic overview of this topic applicable to all engineering disciplines beginning their career in the nuclear power industry. This module covers basic terms and concepts, and methods used to ensure core protection in nuclear power plants. This course will help new engineers understand the importance of core protection, high equipment reliability and system integrity. This module is intended for use as orientation training for new engineering support personnel.

EPRI E.F. ELECTRICAL ENGINEERING

Description: This module covers the basics of electrical engineering topics. The module provides information about basic electrical engineering terms and concepts that help identify electrical-engineering-related design, equipment, and safety considerations as they relate to nuclear power plant employees. EF-EE is intended as orientation training for new engineering support personnel.

EPRI E.F. HEAT TRANSFER AND FLUID FLOW

Description: This module covers basic terms and concepts of heat transfer and fluid flow and discusses their applications in nuclear power plants. This course will help new engineers understand how their work might impact and/or be impacted by heat transfer and fluid flow in a nuclear power plant. This module is intended for use as orientation training for new engineering support personnel.
EPRI E.F. MECHANICAL ENGINEERING

Description: This module covers basic terms and concepts of mechanical engineering and discusses their applications in nuclear power plants. This course will help new engineers understand how their work might impact and/or be impacted by mechanical engineering topics in a nuclear power plant. This module is intended for use as orientation training for new engineering support personnel.

EPRI E.F. NUCLEAR POWER PLANT MATERIALS

Description: This module covers the basic terms and concepts related to nuclear power plant materials and provides information about the significance of material degradation issues in nuclear power plants. Considerations that engineering personnel need to be aware of when selecting and replacing materials, types of degradation, protection and mitigation, and failure detection are also covered. This module is intended for use as orientation training of new engineering support personnel.

EPRI E.F. PROCESS CONTROL SYSTEMS

Description: The Process Control Systems (PCS) module of Engineering Fundamentals (EF-PCS) Version 2.0 provides a basic overview of this topic, applicable to users in all engineering disciplines who are beginning their career in the nuclear power industry. This module covers basic terms and concepts of process control systems and discusses their applications in nuclear power plants. This course will help new engineers understand how their work might impact and/or be impacted by process control systems in a nuclear power plant. This module is intended for use as orientation training for new engineering support personnel.

EPRI PROBABILISTIC RISK ASSESSMENT INTRODUCTION 1.0

Description: This module provides a high level introduction to the fundamentals of Probabilistic Risk Assessment and its use in Risk Informed Regulation. The EPRI Risk and Safety Management Program is developing a series of CBT Modules to assist in the socialization of risk technology, more specifically the understanding of the plant specific Probabilistic Risk Assessments and risk informed regulation. The series of PRA CBT modules are developed in a hierarchical or tiered approach beginning with a high level overview suitable for executives and senior managers. The modules become progressively detailed ending with a significant detail designed for station personnel who need an understanding of the contents of the PRA.

EPRI PROBABILISTIC RISK ASSESSMENT INTRODUCTION 2.1

Description: This is a training module on the application and regulatory implications of Probabilistic Risk Assessment. This is the second module in the EPRI PRA CBT series, PRA CBT Module 2.1.
Description: This is a training module on the application and regulatory implications of Probabilistic Risk Assessment. This is the third module in the EPRI PRA CBT series, PRA CBT Module 2.2, entitled Risk-Informed Regulation. This module is designed to provide a high level introduction to risk-informed regulation of nuclear power plants. This PRA CBT provides a vehicle to introduce non PRA personnel at nuclear power plants to risk-informed regulation. The module provides high level PRA training.
**APPENDIX A: EPRI DIGITAL INSTRUMENTATION**

**Description:** The following courses are on digital instrumentation and control (I&C) issues for new build and operating nuclear plants. Most nuclear utilities are relatively inexperienced with digital I&C technology, and the instrumentation in new plants will be almost exclusively digital. In preparing to implement, operate and maintain digital systems, utilities will need to enhance their in-house digital expertise at all levels, as well as their processes for equipment evaluations, plant modifications and configuration management involving digital.

*Description from: EPRI Product Abstract, Digital Instrumentation & Control CBT Modules 2012

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APPENDIX B: INSTRUCTOR TRAINING

Instructor Certification Training

1. Role of the Instructor
2. Analysis
3. Design
4. Development
5. Implementation
6. Evaluation
7. ICP Exam

Need help? Contact the NANTeL Help Desk at 770-644-8900 or nantelhelpdesk@inpo.org.

Thanks to Randy Burk for contribution of the cover photo.