NUCLEAR POWER PLANT OPERATIONS

May 6-7, 2019
Offices of Morgan, Lewis & Bockius LLP
Washington, DC

RELATED EVENT:

U.S. NUCLEAR REGULATION BASICS (NRC 101)
May 7-8, 2019 | Washington, DC

“Very informative, very interactive and very entertaining! This course helped me better understand how a nuclear plant operates, shuts down, refuels and reconnects during the grid.”

Applications Engineer, Diaknot

EUCI is authorized by IACET to offer 1.1 CEUs for the course

EUCI is authorized by CPE to offer 12 credits for the course
OVERVIEW

The nuclear power plant (NPP) operations course provides attendees with a clear understanding of how these powerful plants function and produce electricity. The course describes how plants are built, how a nuclear startup is conducted, and how the plant is taken from cold iron to 100-percent power. Plant staffing and full power operations will be addressed including boration/dilution, fuel rods, and electrical load. Functions of components of the balance-of-plant (outside of the nuclear island) will be described (turbines, generators, and cooling systems). The inherent stability and safety systems of nuclear plants will be covered in detail. Procedures for conducting a refueling outage and discussion of major outage tasks, including refueling, CEA changeouts, component rebuilds, and surveillance testing will be conducted. Participants will complete the course with full comprehension of and appreciation for the functions of the NPP and the production of electricity in the nuclear environment.

Topics include:
• The fission process, plant startups, and how reactors work
• How plants are staffed and what positions are required in a nuclear plant
• Thermal cycle, heat transfer, and the components of a nuclear plant
• How electricity is produced in a nuclear power plant
• The intricacies of plant safety systems
• What is required in managing refuel outages and how nuclear fuel reloads are accomplished

LEARNING OUTCOMES

• Describe how fission is accomplished and the basics of how a nuclear reactor produces energy
• Explain the three loops in a nuclear plant
• Examine the staffing and personnel assignments required in a nuclear plant
• Discuss the thermal cycle and describe heat transfer and fluid flow
• Identify the major components of a nuclear power plant including generators, turbines, and cooling systems
• Discuss normal nuclear power plant operations and compare the variations in startup, steady-state operations, and shutdowns
• Examine nuclear power plant safety systems and the concepts of redundancy and defense-in-depth
• Describe the requirements associated with a refuel outage and nuclear fuel reload

WHO SHOULD ATTEND

• All employees whose jobs require a working knowledge of nuclear power plant operations
• Personnel in the energy industry who are newly assigned to nuclear generation
• Contractors involved with nuclear plant operations, maintenance, and specific projects
• Employees who require a job-related understanding of the operations of nuclear power plants
• Public affairs and public relations personnel who need an understanding of nuclear energy
• Executives and managers who require training in nuclear power plant operations
• Engineers with responsibilities in nuclear power
• Suppliers and vendors involved in the procurement cycle for new and existing nuclear plants
• Attorneys and paralegals whose work is directly or indirectly involved with nuclear energy

“Fantastic – did not speak over our head, was able to relay info in comprehensive examples. My concerns that the class would exceed my comprehension level diminished right away.”

Chief Estimator, Graycor
AGENDA

MONDAY, MAY 6, 2019

7:30 – 8:00 am  Registration and Continental Breakfast

8:00 – 10:00 am  Course Introduction
  • Fission process
  • Reactor coolant system (RCS) explanation
    o Reactor Core and associated Loops
    o Secondary plant
    o Heat rejection methods
  • Plant staffing
  • Technical specifications
    o Why they exist
    o Basic rules of use
  • Procedures and their hierarchy

10:00 – 10:15 am  Morning Break

10:15 am – 12:00 pm  Thermal Cycle
  • Basic heat transfer and fluid flow
    o Psat/Tsat
    o Latent heat
  • Major systems within a nuclear plant
    o RCS
    o Steam generators and their support systems
    o Main turbine
    o Main generator
    o Chemical Volume Control
    o Cooling systems

12:00 – 1:00 pm  Group Luncheon

1:00 – 2:45 pm  Normal Plant Operations
  • Plant startup
  • Steady-state operations
  • Plant shutdown

2:45 – 3:00 pm  Afternoon Break

3:00 – 5:00 pm  Plant Safety Systems
  • Interrelationships
  • Redundancy
  • Accident conditions
    o High/low pressure injection
    o Containment spray
    o Recirculation actuations
    o Auxiliary feedwater
    o Emergency diesel generators
    o Ventilations systems

5:00 pm  Day 1 Wrap-Up

“Class information was easy to follow and understand. The instructor kept the class engaged and interesting.”
Nuclear Program Manager, Duke Energy

“Excellent overview of nuclear power plant operations.”
Principal Engineer, Austin Energy

“Great course with quality of content packed into a short time. Excellent take away reference! Highly recommend! Illustration pictures were great learning enforcement.”
Technical Advisor, EPRI
AGENDA

TUESDAY, MAY 7, 2019

8:00 – 8:30 am  Continental Breakfast

8:30 – 10:15 am  Refueling Outage
  • Cooldown/depressurization
  • Destack
  • Mode 6 and defueled
  • Offload

10:15 – 10:30 am  Morning Break

10:30 – 11:45 am  Reload
  • Restack
  • RCS fill/vent
  • Heat-up
  • Mode changes
  • Major outage work/testing

11:45 am – 12:00 pm  Course Wrap-Up, Assessment, and Conclusion

COURSE INSTRUCTOR

Mr. Ronald L. York
Nuclear Industry Consultant

Mr. York has more than 35 years of experience in the commercial nuclear power industry. Ron began his career as a naval submarine reactor operator, followed by several years of building submarines at Electric Boat. He began working in the commercial nuclear industry as a cold licensed senior reactor operator (SRO) at Waterford 3 outside New Orleans shortly after the Three Mile Island event. Ron served in many capacities with Entergy and six other nuclear power companies. During his career, besides holding an active NRC SRO license until 1990, he held multiple SRO certifications and worked at both Combustion Engineering (CE) and Westinghouse sites. Ron has been a control room supervisor, refueling supervisor, outage and containment coordinator, emergency plan writer /drill controller, and operations procedure writer. He was INPO certified as a Simulator and Classroom Operations Instructor and has written numerous operation and management training curricula, and presented lectures and simulator training in nuclear power plant operations for initial licensed operator candidates, requalification training for licensed and senior licensed operators, Shift Technical Advisors (STAs), senior management, and has written and administrated NRC initial and requalification exams.

“Very good presentation, got to learn very important things in a short time.”
Engineer, Western Services Corporation

“This course provided an excellent overview of nuclear power plant design, operation, and safety considerations.”
President, EJCON Corp.
REQUIREMENTS FOR SUCCESSFUL COMPLETION

Participants must sign in/out each day and be in attendance for the entirety of the course to be eligible for continuing education credit.

INSTRUCTIONAL METHODS

PowerPoint presentations and classroom discussions will be used in this course.

IACET CREDITS

EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

EUCI is authorized by IACET to offer 1.1 CEUs for the course.

CPE CREDITS

EUCI is registered with the National Association of State Boards of Accountancy (NASBA) as a sponsor of continuing professional education on the National Registry of CPE Sponsors. State boards of accountancy have final authority on the acceptance of individual courses for CPE credit. Complaints regarding registered sponsors may be submitted to the National Registry of CPE Sponsors through its website: www.learningmarket.org.

Upon successful completion of this event, program participants interested in receiving CPE credits will receive a certificate of completion. EUCI is authorized by CPE to offer 12 credits for the course.

There is no prerequisite for this course.

Program Level: Beginner  Delivery Method: Group-Live  Advanced Preparation: None

EVENT LOCATION/NEARBY HOTELS

Offices of Morgan, Lewis & Bockius LLP
1111 Pennsylvania Avenue, NW
Washington, DC 20004
202-739-3000

Nearby Hotels:

- JW Marriott Hotel Pennsylvania Avenue
  1331 Pennsylvania Ave. NW, Washington, D.C.
  202-393-2000

- InterContinental The Willard Washington DC Hotel
  1401 Pennsylvania Ave. NW, Washington, D.C.
  877-270-1390

- W Hotel Washington DC
  515 15th St. NW, Washington, D.C.
  202-661-2400

- Washington Marriott at Metro Center
  775 12th St. NW, Washington, D.C.
  202-737-2200

- Grand Hyatt Washington
  1000 H St. NW, Washington, D.C.
  202-582-1234

REGISTER 3, SEND THE 4TH FREE

Any organization wishing to send multiple attendees to this course may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.
Substitutions & Cancellations

Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before April 5, 2019 in order to be refunded and will be subject to a US $195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of course cancellation, EUCI’s liability is limited to refund of the event registration fee only.

For more information regarding administrative policies, such as complaints and refunds, please contact our offices at 303-770-8800. EUCI reserves the right to alter this program without prior notice.

PLEASE REGISTER

- **SPECIAL BUNDLE PRICE** NUCLEAR POWER PLANT OPERATIONS AND U.S. NUCLEAR REGULATION BASICS (NRC 101) COURSES
  - MAY 6-8, 2019: US $2395
  - Early bird on or before April 19, 2019: US $2195

- **NUCLEAR POWER PLANT OPERATIONS COURSE ONLY**
  - MAY 6-7, 2019: US $1395
  - Early bird on or before April 19, 2019: US $1195

Print Name  |  Job Title
---|---

Company

What name do you prefer on your name badge?

Address

City  |  State/Province  |  Zip/Postal Code  |  Country
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List any dietary or accessibility needs here

CREDIT CARD INFORMATION

Name on Card  |  Billing Address
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Account Number  |  Billing City  |  Billing State
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Exp. Date  |  Security Code (last 3 digits on the back of Visa and MC or 4 digits on front of AmEx)  |  Billing Zip Code/Postal Code
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OR Enclosed is a check for $ supplied to cover registrations.

EUCI reserves the right to alter this program without prior notice.

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