



2022

Open Enrollment Training Calendar



Plants and Utilities have long recognized the incremental improvements in plant safety, quality, and efficiency that effective training brings. At Crane Nuclear our training classes offer:

- Experienced and knowledgeable instructors:**
Learn from expert personnel who actively work in the field.
- Small class sizes:**
Maximum of 8 students per class to ensure greater interaction and increased participation.
- Modern training facilities:**
State-of-the-art facilities with access to a variety of valves, actuators, and diagnostic equipment.
- Extensive hands-on training:**
Increase understanding by working directly with the equipment encountered in the field.

2022

To register for a course,
visit our website
and select *Training*

www.cranenuclear.com

Training Calendar

| PART | COURSE | DATE(S) | PREREQUISITE | DAYS | TUITION (per student) |
|-----------------------|--|-----------|--------------|------|--------------------------|
| TR-9-70110-HA | Limatorque Actuator Maintenance and Repair | Jan 24 | None | 5 | \$4130.00 |
| | Instruction on mechanical and electrical operation of Limatorque® SMB, SB, SBD, and HBC actuators. Through classroom instruction and hands-on experience, this course will provide the student with practical knowledge on the operation, refurbishment, troubleshooting, and preventive maintenance of Limatorque® actuators. Instruction covers theories of operation of SMB-000 through SMB-4 and H0BC through H3BC actuators, and provides hands-on disassembly/reassembly of various SMB and HBC actuators. | | | | |
| TR-9-90530-HA | Actuator Instrumentation Maintenance & Repair | Jan 17 | None | 5 | \$4130.00 |
| | Course provides structure around typical maintenance, repair, and troubleshooting of various types of actuators, associated instruments, and accessories used in the modern power generation industry. All major components and their function will be discussed. The student will perform functional testing, disassemble/assemble, and calibrate positioners in the lab portion in order to pass the course. | | | | |
| TR-9-91400-HA | VOTES Infinity MOV Data Acquisition and Basic Analysis | Jan 31 | TR-9-70110 | 5 | \$4330.00 |
| | Course provides instruction on the proper installation and operation of the VOTES Infinity Motor-Operated Valve (MOV) diagnostic system through classroom instruction, hands-on laboratory training, and OE discussions. Upon successful course completion, the student will be able to correctly set up and operate the VOTES Infinity diagnostic system, adjust actuator limit and torque switches, and identify critical MOV parameters and common degradations through basic signature analysis. | | | | |
| TR-9-91410-HA | VOTES Infinity MOV Advanced Signature Analysis | Feb 7 | TR-9-91400 | 5 | \$4330.00 |
| | Course provides instruction on the analysis of Motor-Operated Valve (MOV) performance test data utilizing the VOTES Infinity diagnostic system. The signature analysis techniques covered in this course include: critical MOV parameters, actuator / valve degradations, and the components of differential pressure traces. An overview is presented on generic acceptance criteria for MOVs and industry standard pressure equations. | | | | |
| TR-9-91510-HA | VOTES Infinity AOV Data Acquisition and Basic Analysis | Jan 24 | TR-9-90530 | 5 | \$4330.00 |
| | Course provides instruction on the proper installation and operation of the VOTES Infinity Air-Operated Valve (AOV) diagnostic system through classroom instruction, hands-on laboratory training, and OE discussions. Upon successful course completion, the student will be able to correctly set up and operate the VOTES Infinity diagnostic system, acquire test data, and evaluate typical AOV performance parameters and common actuator / valve degradations through basic signature analysis techniques. | | | | |
| TR-9-91520-HA | VOTES Infinity AOV Advanced Signature Analysis | Jan 31 | TR-9-91510 | 5 | \$4330.00 |
| | Classroom instruction on the analysis of Air-Operated Valve (AOV) performance test data utilizing the CRANE® Nuclear Diagnostic Software. Students analyze numerous real traces acquired with CRANE® Nuclear diagnostic equipment and learn to recognize healthy traces and those with anomalies such as: stem wear, packing anomalies, stiction, air leaks. | | | | |
| TR-9- 70200-HA | Valve Maintenance and Repair | Summer 22 | None | 5 | \$4130.00 |
| | Course provides instruction on how to maintain gate, globe, check, and butterfly valves to optimum working condition. The classroom discussion and hands-on laboratory experience covers the principals of operation, disassembly, inspection, adjustment, and reassembly of gate, globe and check valves. An overview is presented on the techniques of packing removal and installation, lapping of valve seats and wedges to facilitate fit up, blue check, and in-line machining of valve components including the use of specialty tools. | | | | |
| TR-9- 91600-HA | VOTES Infinity Check Valve Data Acquisition and Basic Analysis | Feb 7 | None | 5 | \$4330.00 |
| | This course instructs students in the use of acoustic, eddy current, and ultrasonic technologies used for check valve diagnostics. Instruction and hands on activities will demonstrate how to acquire and analyze signatures to verify proper operation of check valves. Students will learn advanced techniques for acoustics, eddy current and ultrasonic theory and application for check valve diagnosis. Operational issues covered during the class include: disk flutter, disk position in flow, and backseat disc tapping. Extensive hands-on time with a variety of valves in our flow loop. | | | | |

Training Calendar

| PART | COURSE | DATE(S) | PREREQUISITE | DAYS | TUITION (per student) |
|---|--|-----------|--------------|------|--------------------------|
| TR-9-70110-HA | Limatorque Actuator Maintenance and Repair | June 6 | None | 5 | \$4130.00 |
| | Instruction on mechanical and electrical operation of Limatorque® SMB, SB, SBD, and HBC actuators. Through classroom instruction and hands-on experience, this course will provide the student with practical knowledge on the operation, refurbishment, troubleshooting, and preventive maintenance of Limatorque® actuators. Instruction covers theories of operation of SMB-000 through SMB-4 and H0BC through H3BC actuators, and provides hands-on disassembly/reassembly of various SMB and HBC actuators. | | | | |
| TR-9-90530-HA | Actuator Instrumentation Maintenance & Repair | July 11 | None | 5 | \$4130.00 |
| | Course provides structure around typical maintenance, repair, and troubleshooting of various types of actuators, associated instruments, and accessories used in the modern power generation industry. All major components and their function will be discussed. The student will perform functional testing, disassemble/assemble, and calibrate positioners in the lab portion in order to pass the course. | | | | |
| TR-9-91400-HA | VOTES Infinity MOV Data Acquisition and Basic Analysis | June 13 | TR-9-70110 | 5 | \$4330.00 |
| | Course provides instruction on the proper installation and operation of the VOTES Infinity Motor-Operated Valve (MOV) diagnostic system through classroom instruction, hands-on laboratory training, and OE discussions. Upon successful course completion, the student will be able to correctly set up and operate the VOTES Infinity diagnostic system, adjust actuator limit and torque switches, and identify critical MOV parameters and common degradations through basic signature analysis. | | | | |
| TR-9-91410-HA | VOTES Infinity MOV Advanced Signature Analysis | June 20 | TR-9-91400 | 5 | \$4330.00 |
| | Course provides instruction on the analysis of Motor-Operated Valve (MOV) performance test data utilizing the VOTES Infinity diagnostic system. The signature analysis techniques covered in this course include: critical MOV parameters, actuator / valve degradations, and the components of differential pressure traces. An overview is presented on generic acceptance criteria for MOVs and industry standard pressure equations. | | | | |
| TR-9-91510-HA | VOTES Infinity AOV Data Acquisition and Basic Analysis | July 18 | TR-9-90530 | 5 | \$4330.00 |
| | Course provides instruction on the proper installation and operation of the VOTES Infinity Air-Operated Valve (AOV) diagnostic system through classroom instruction, hands-on laboratory training, and OE discussions. Upon successful course completion, the student will be able to correctly set up and operate the VOTES Infinity diagnostic system, acquire test data, and evaluate typical AOV performance parameters and common actuator / valve degradations through basic signature analysis techniques. | | | | |
| TR-9-91520-HA | VOTES Infinity AOV Advanced Signature Analysis | July 25 | TR-9-91510 | 5 | \$4330.00 |
| | Classroom instruction on the analysis of Air-Operated Valve (AOV) performance test data utilizing the CRANE® Nuclear Diagnostic Software. Students analyze numerous real traces acquired with CRANE® Nuclear diagnostic equipment and learn to recognize healthy traces and those with anomalies such as: stem wear, packing anomalies, stiction, air leaks. | | | | |
| TR-9- 70200-HA | Valve Maintenance and Repair | Aug 8 | None | 5 | \$4130.00 |
| | Course provides instruction on how to maintain gate, globe, check, and butterfly valves to optimum working condition. The classroom discussion and hands-on laboratory experience covers the principals of operation, disassembly, inspection, adjustment, and reassembly of gate, globe and check valves. An overview is presented on the techniques of packing removal and installation, lapping of valve seats and wedges to facilitate fit up, blue check, and in-line machining of valve components including the use of specialty tools. | | | | |
| TR-9- 91600-HA | VOTES Infinity Check Valve Data Acquisition and Basic Analysis | Aug 15 | None | 5 | \$4330.00 |
| | This course instructs students in the use of acoustic, eddy current, and ultrasonic technologies used for check valve diagnostics. Instruction and hands on activities will demonstrate how to acquire and analyze signatures to verify proper operation of check valves. Students will learn advanced techniques for acoustics, eddy current and ultrasonic theory and application for check valve diagnosis. Operational issues covered during the class include: disk flutter, disk position in flow, and backseat disc tapping. Extensive hands-on time with a variety of valves in our flow loop. | | | | |
| 2022 AOV / MOV Technical Seminar | | Aug 23-24 | None | 3 | None |
| | The Technical Seminar is a continuing training opportunity for VOTES Infinity users to keep abreast of the latest software and hardware improvements. Time is allocated for discussions, workshops, external vendor presentations and plenty of hands-on training. | | | | |

To register for a course, visit:
www.cranenuclear.com
and select *Training*
or email: **training@cranevs.com**
or email Stephanie Hood, Training
Coordinator, at **shood@cranevs.com**



Terms and Conditions

- CRANE reserves the right to limit class sizes
- Attendees are strongly encouraged to register greater than 30 days prior to class start date.
- CRANE reserves the right to cancel any class. If a class is cancelled, students will be notified.
- If a class does not meet the minimum enrollment, it will be cancelled within 30 days of the start date.
- Pricing does not include food, beverages, lodging or transportation.
- Payments made by credit card will carry a 3% processing fee.
- Class registration is not confirmed by CRANE without a P.O. or registration committing payment (credit card).
- No refunds are available for cancellations made less than 30 days from the start of the scheduled course.
- All open enrollment courses are offered at the CRANE Nuclear Kennesaw, GA training center.
- Course attendee substitutions are acceptable any time prior to the course start date, however, CRANE must be notified in writing prior to the class start date.

