



LIFE CYCLE
INSTITUTE



LIFE CYCLE ENGINEERING • LIFE CYCLE ENGINEERING • LIFE CYCLE ENGINEERING

SHUTDOWN TURNAROUND AND OUTAGE COMPETENCY IMPROVEMENT PROGRAM®

▶ **A three week best-practices program**

Are your large maintenance events more costly and time consuming than planned?

You can improve your STO performance by building competency in STO best practices. These processes will help you manage risk and stay on schedule and budget.

STOs are a substantial financial investment that impacts everyone, from shareholders and board members to front-line maintenance workers. Shutdowns that are not well-planned and managed cause safety risks, unplanned downtime, cost overruns (which can easily run into the millions), and reduced profitability resulting from not returning to full operating capacity on schedule.

Clients who have implemented best practices taught by the Life Cycle Institute have seen these benefits:

- 20% shorter downtime or 20% more work capacity in the same downtime interval
- A 40% decrease in start-up time
- Achieving stable output days sooner
- Less waste
- Greater utilization of resources
- Fewer instances of improvisation
- Increased yield
- Uncompromised quality, safety, and compliance
- Cost savings on labor, materials and rentals

STO Competency Improvement Program

The Institute will provide an STO subject matter expert (SME) for three weeks to help your organization implement new processes and behaviors. We will apply our proprietary 3A Learning® process to create sustained behavior change by establishing clear alignment on expectations, delivering active classroom learning experiences, and providing hands-on coaching.

Week 1

In our first week on site we will perform an assessment of the organization's current shutdown processes and procedures. The STO SME will guide development of processes and procedures that reflect best practices. Following the assessment we will deliver the two-day Leadership for Shutdowns, Turnarounds and Outages course.

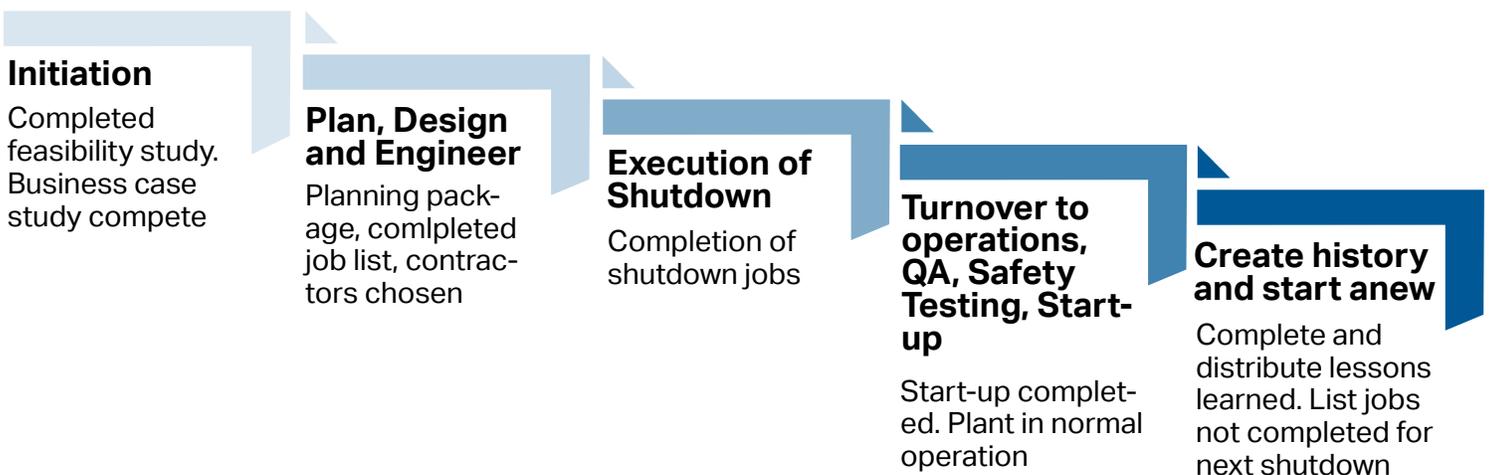
Week 2

The Life Cycle Institute will deliver the three-day Planning for Shutdowns, Turnarounds and Outages class. Individual coaching on STO planning will also occur this week.

Week 3

We will coach your team on applying the tools and techniques learned in the first two weeks. We will guide you on embedding these best practices into the organization's culture so they will be in place for future shutdowns.

Shutdown phases





Course Information

Two courses are delivered during this three-week engagement to prepare your team to execute well-planned shutdowns, turnarounds and outages. During the first week of STO Competency Improvement you will be introduced to 3A Learning®, a process developed by the Life Cycle Institute that uses a three-phase approach to ensure knowledge is transferred from the classroom to the workplace.

Leadership for Shutdowns, Turnarounds a Outages

Delivered during Week 1

Well-run shutdowns require leaders to motivate employees, manage tempers and stress levels of workers, make decisions, communicate, and manage time and meetings. This two-day class examines the leadership aspects of running shutdowns.

In this course leaders will learn how to:

- Use proven methods for handling problems with difficult employees, vendors, and coworkers.
- Communicate with management to get them to implement your suggestions.
- Avoid pitfalls in decision-making Understand the legal side of shutdowns and planning.
- Implement techniques to improve your workers' productivity.
- Work with international crews.Understand why people make wrong decisions in spite of evidence.
- Optimize your particular strengths and minimize your weaknesses.Improve communication skills.
- Control your reactions in high-stress situations to make the best decisions at those critical moments.
- Implement the three basic rules of managing employees so that you motivate your workforce to perform at the highest level possible.
- Present what you have learned at this seminar so that management will see it (and you) in a positive light.

Planning for Shutdowns, Turnarounds and Outages

Delivered during Week 2

It is essential that the entire shutdown team has a deep understanding of how shutdowns work, and is familiar with your shutdown strategy. The team will be exposed to examples of best practices from their industry and other industries. This three-day course includes specific checklists, procedures, strategies and important outside resources that will improve your current shutdown planning and execution.

In this course the shutdown team will learn how to:

- Develop a checklist of everything to consider before the shutdown and when to consider it.
- Evaluate the effectiveness of your current shutdown effortMeasure your shutdown efficiency by benchmarking with world-class shutdown strategies
- Formulate good contractor relations to further reliability
- Unearth tools and technologies that can smooth the process and create a backbone for effective plant maintenance and reliability
- Coordinate contractors and in-house staff to obtain an effective workflow
- Reduce unnecessary costs incurred by properly planning, executing and closing your shutdown

The Life Cycle Institute

Changing Behavior to Produce Results®

The Life Cycle Institute helps individuals and organizations reduce risk, improve performance and engage employees by delivering training and coaching that changes behavior to produce results. Our team of learning, leadership and change management professionals integrates the art and science of learning and change with the understanding that learning is change, and change is learning.

3A Learning®

Learning is not an event – it is a process. The classroom is important but the fact is that most learning takes place when we apply the tools and techniques we discovered in the learning event. Learning is a process of alignment, assimilation, and application. Only by completing all three steps of this process can we change behavior to produce desired results.



Alignment Phase

Before participating in a learning event participants should have a thorough understanding of what they are expected to learn, how their behavior is expected to change, the results they are expected to achieve, and how these results contribute to the overall goals of the organization.

Assimilation Phase

The Assimilation phase is the training event. This is where we manage the process of acquiring new knowledge and skills by making learning 70% active, leveraging the learner's prior experience, using relevant examples, and allowing learners to direct how they learn. It is this critical environment where learners are given a chance to learn and practice new skills they can transfer on the job. The class leader should be able to balance instruction and facilitation skills to bring learning to life and help the participant to understand how it can be applied on the job.

Application Phase

Applying what one has learned is where most of learning takes place. It is using the skills and knowledge within the work environment that makes the learning stick, causing a behavior change that produces desired results. In this step it is important to experience early success. This early success depends on leadership support and coaching.

Earn your certificate in Reliability Engineering from The Life Cycle Institute and Clemson University!

Learn practical skills that can be applied on the job right away, demonstrate your commitment to reliability and continuous improvement, and increase your value to your organization!

The Reliability Engineering Certificate Program requires the completion of four courses:

- Reliability Engineering Excellence
- Root Cause Analysis
- Predictive Maintenance Strategy
- Risk-Based Asset Management

Candidates for the Reliability Engineering Certificate program also have the option to achieve the Reliability Engineer Certification (REC) by completing a work product.

LIFE CYCLE ENGINEERING:

Life Cycle Engineering (LCE) provides consulting, engineering, applied technology and education solutions that deliver lasting results for private industry, the Department of Defense and other government organizations. The quality, expertise and dedication of our employees enable Life Cycle Engineering to serve as a trusted resource that helps people and organizations to achieve their full potential. Founded in 1976, LCE is headquartered in Charleston, South Carolina with offices across North America and experience around the globe.



OUR SOLUTIONS & SERVICES:

- Reliability Consulting & Services
- Asset Management Services
- Applied Information Technology Solutions
- Engineering & Technical Services
- Integrated Logistics Support (ILS) Services
- Financial Management Services
- Program Support Services
- Education at the Life Cycle Institute