Engineering Consulting & Training Services

CARMAGEN Engineering, Inc.

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# Ten Ways to Achieving Successful Turnarounds

*By Bob Motylenski*

Turnarounds are the single biggest annual maintenance expenditure that a process plant can experience and have a major effect on future operations and safety. Therefore, they need to be executed in an efficient and effective manner. The following lists ten key areas that need to be addressed to achieve a "World Class" turnaround.

1. Safety is the number one goal for a turnaround: no disabling injuries or environmental excursions. Overall comprehensive safety, health, and environmental plans should be prepared that outline all the policies and procedures that are applicable to the turnaround.

2. Management must provide the underlying guidance and support, funding, and personnel needed by the organization to ensure a successful turnaround, including establishing a Turnaround Steering Committee and setting achievable turnaround objectives.

3. An Overall Milestone Plan, showing all key activities that need to be carried out prior to execution, must be prepared once the timing for the turnaround is defined. It is a key document showing the interaction of major planning activities and is used to steward progress.

4. Work Scope must be identified within a defined timeframe, screened using a risk matrix, and approved by the Turnaround Steering Committee. A "Cold Eye" review of the finalized work list should be conducted to ensure work scope is optimized.

5. Planning and Scheduling should be done by a dedicated team that can evaluate alternative work methods to minimize cost and impact on schedule. Critical-path activities need to be identified as early as possible in planning.

6. A Contracting Strategy for the turnaround should be prepared as soon as the turnaround dates are fixed, and major contracts awarded in a timely manner. All contractor plans and schedules should be reviewed and integrated into the overall plan and schedule.

7. Materials that have long delivery times must be identified and ordered as early as possible so that they are available onsite in time for the turnaround.

## Upcoming Training Courses

- Course 607
  *Design and Maintenance of Aboveground Atmospheric Storage Tanks*
  January 20-22, 2015 in TX
  February 24-26, 2015 in NJ

- Course 1600
  *Achieving World Class Maintenance Performance*
  February 10-12, 2015 in TX
  March 17-19, 2015 in NJ

For more information, see our website at www.carmagen.com.

## Work Highlights

*Process, Operations & Safety*

- *Completed a Process Design Specification covering the implementation of protective systems on several fired heaters in a refinery in Central America.*
- *Prepared and conducted a risk management training course for a client onsite in China.*
- *Provided technical onsite support to a Columbian client conducting unit corrosion and materials workshop training/ assessment for a new Delayed Coker planned for construction.*
- *Performed cold eyes review support regarding a client's HF Alkylation unit status and modifications.*
- *Providing process consultation for assessment of several third-party breakthrough technologies.*

8. Pre-turnaround Inspections should be completed as early as possible so the work is included in the work scope. Also, turnaround inspections should be identified so that they can be included in the work scope.

9. Process Operations should prepare optimized shutdown and startup plans that are integrated into the overall schedule. Critical-path equipment should be made available early in the shutdown.

10. Engineering/Project Activities need to be completed in accordance with the turnaround timeline. Once the work list is closed, no project work should be added to the turnaround work list.

*About the Author*

*Bob Motylenski has over 40 years of process industry experience in the field of Reliability and Maintenance (R&M). Since retirement from the Reliability and Maintenance Services Group of ExxonMobil Research and Engineering Company, he assisted a refinery in improving their management of turnarounds, participated on plant maintenance and turnaround surveys, and on risk mitigation teams for the US Army chemical demilitarization program. Bob prepared and presented courses in Europe and the mid-East on turnaround practices, effective reliability, and modern maintenance management. During his Exxon career, he worked with almost every Exxon refinery worldwide and several affiliated production facilities on improving their reliability and maintenance performance.*

*Please contact Vince Carucci (vcarucci@carmagen.com) if you'd like more information on Carmagen's expertise in this area.*