

EVERGREEN ENGINEERING, INC.

Construction and
Maintenance
Management for
Shutdowns and
Utility Outages

WRBA

March 13, 2013



Evergreen Engineering, Inc.



Introductions

◆ Kevin Tangen, PE CEM

- 31 years Engineering Experience
- 6 years as Mechanical Manager for Boiler Manufacturer
- Construction Management since 1983

◆ Rebecca Knecht, CEM

- 8 years in U.S. Navy Nuclear program
- 5 years as biomass plant Operations Manager
- Mechanical Design and Project Management

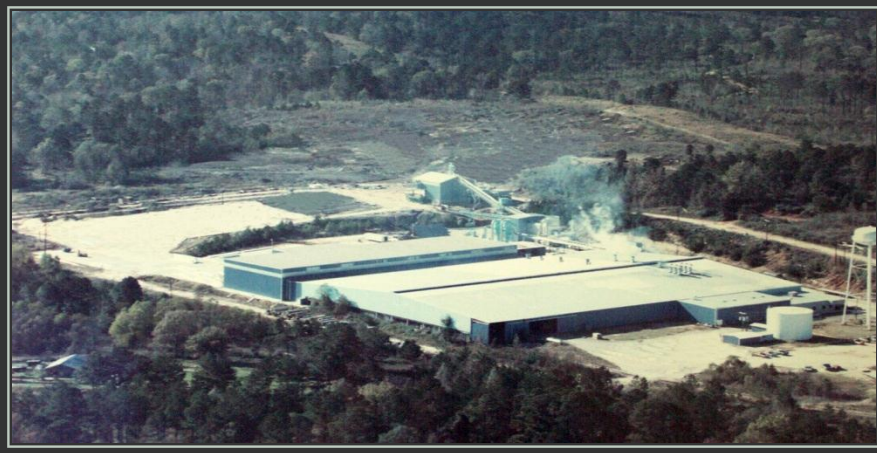


CMS – Definition

- ◆ **Construction Management Services**
(CMS) is the overall planning, coordination, and control of a project from beginning to completion.
- ◆ **Conventional CMS – complete plant**
- ◆ **Outage and Shutdown Management**



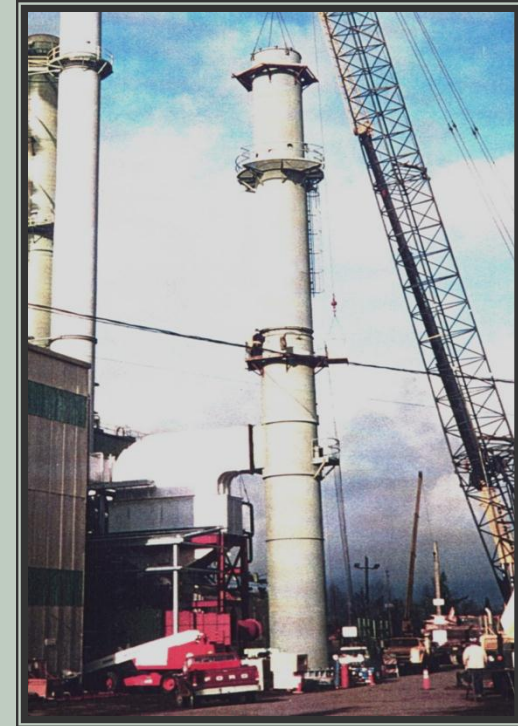
CMS Example Projects



Green Field



Critical Staffing



Retrofits



Outage and Shutdown Management

- ◆ Planning
- ◆ Outage Implementation
- ◆ Follow-up Reporting



Planning

- ◆ Outage Goals
- ◆ Contractor Selection
- ◆ Scheduling – Detailed and Flexible
- ◆ Pre-planning Meetings
- ◆ Parts Inventory – Critical Spares



Outage Execution

- ◆ Daily Progress Meetings
- ◆ Shift Turnover Meetings
- ◆ Change Order Tracking and Budget
- ◆ Safety Management
- ◆ Quality Assurance
- ◆ Contractor Interface
- ◆ Schedule Management



Schedule Management

- ◆ Communication
- ◆ Suited to the Client
- ◆ Targets of Opportunities
- ◆ 24-hour Coverage
- ◆ Crisis Management



Follow-up Reporting

- ◆ Schedule Review – Critical Path Items
- ◆ Review Budget and Change Orders
- ◆ Event Record
- ◆ Shift Report Summary
- ◆ Recommendations for Next Shutdown
- ◆ Contractor Evaluations
- ◆ Lessons Learned



Conclusion

- ◆ Scalability
- ◆ Duration
- ◆ Staff Size
- ◆ Value-Added Services



EVERGREEN ENGINEERING, INC.

Construction and
Maintenance
Management for
Shutdowns and
Utility Outages

Contact Us

ktangen@eeeug.com

rknecht@eeeug.com

(541) 484-4771

www.EvergreenEngineering.com



Evergreen Engineering, Inc.



Why is Evergreen Unique?

- ◆ We Approach Projects from a Facilities Operations Perspective
- ◆ We Have a High Percentage of Personnel with Plant Experience
- ◆ We Focus on the Ability to Construct & Maintain
- ◆ We Have a High Engineer/Designer Ratio
- ◆ Our Principal-in-Charge Concept

