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MANAGEMENT CONSULTANTS

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Effective Generation Fleet Management

Lessons from Conventional Generation

May 25, 2016

Agenda

- Introduction
- Playbook Overview
- Benefits
- Case Study
- Applications
- Lessons Learned
- Q&A



Introduction

- Conventional generation operators have a compelling way to manage their fleets for success
- Playbooks (or management systems) are used to manage the business of running a generation fleet
 - Drive intended results
 - Standardize operations
 - Encourage continuous improvement
- Wind generation is at scale to benefit from the application of a playbook



Playbook Overview

- Similar to a sport's team playbook
- Coherent framework (or roadmap) to define how the business will operate
- Four key components, all fundamental to sound management



Vision and Values

- *What we aspire to*
- *How we measure success*
- *How we behave*



Planning and Monitoring

- *How we improve our business*
- *How we hold ourselves accountable*



Operational Controls

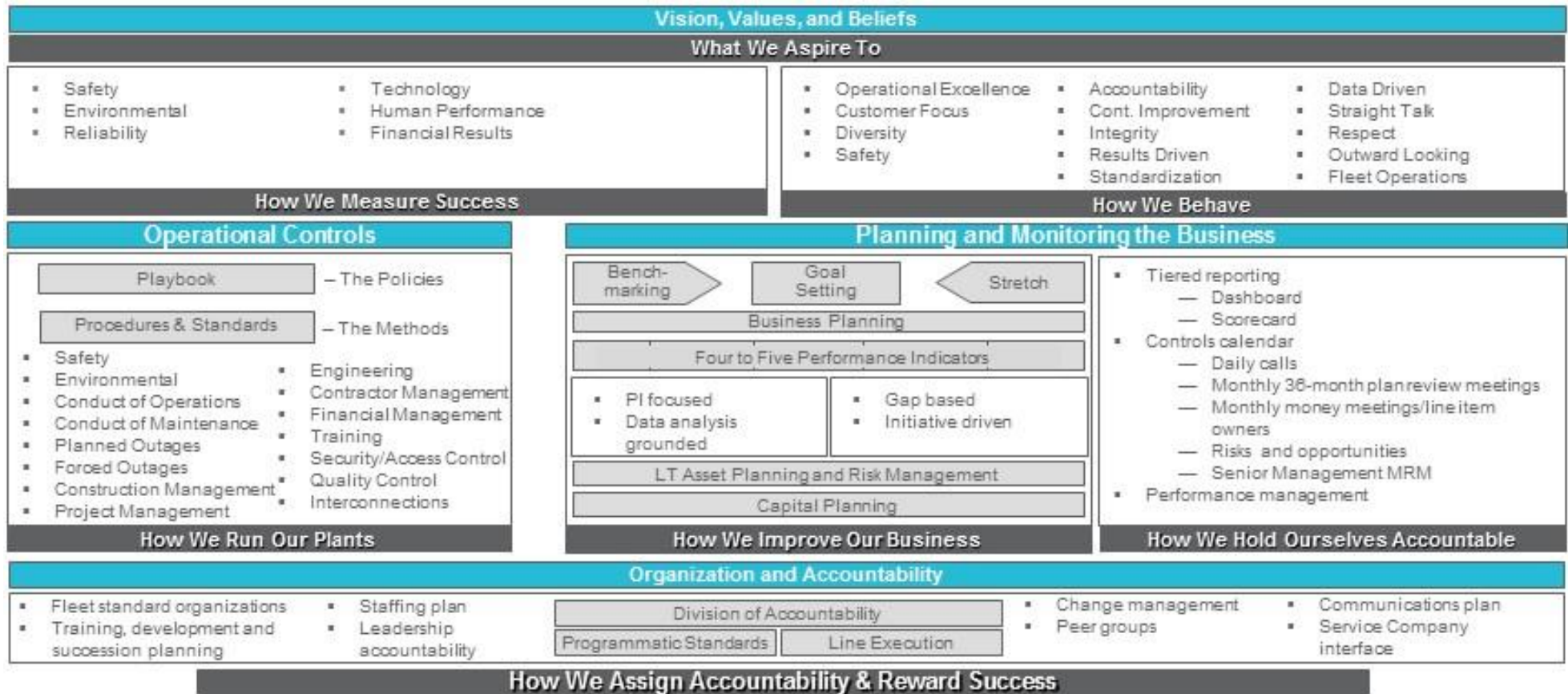
- *How we run our plants*



Organization and Accountability

- *How we assign accountability and measure success*

Playbook Overview (Cont'd)



Playbook Overview (Cont'd)

Vision, Values, and Beliefs

What We Aspire To

- Safety
- Environmental
- Reliability
- Technology
- Human Performance
- Financial Results

- Operational Excellence
- Customer Focus
- Diversity
- Safety
- Accountability
- Cont. Improvement
- Integrity
- Results Driven
- Standardization
- Data Driven
- Straight Talk
- Respect
- Outward Looking
- Fleet Operations

How We Measure Success

How We Behave

Playbook Overview (Cont'd)



Playbook Overview (Cont'd)

Operational Controls

Playbook

– The Policies

Procedures & Standards

– The Methods

Increasing Level Of Detail

- Safety
- Environmental
- Conduct of Operations
- Conduct of Maintenance
- Planned Outages
- Forced Outages
- Construction Management
- Project Management
- Engineering
- Contractor Management
- Financial Management
- Training
- Security/Access Control
- Quality Control
- Interconnections

Playbook Overview (Cont'd)

Organization and Accountability

- Fleet standard organizations
- Training, development and succession planning
- Staffing plan
- Leadership accountability
- Incentive structure tied to plan goals

Division of Accountability	
Programmatic Standards	Line Execution

- Change management
- Peer groups
- Communications plan
- Service Company interface

How We Assign Accountability & Reward Success

Playbook Benefits

- Drive specific results through planning
 - Identify specific outcomes required and plan for them
 - Ensure resources and priorities are aligned to common goals
- Increase operational consistency and make it replicable
 - Identify and transfer best practices throughout the generation fleet
 - Document the proven model
 - Train new employees on the standards
 - Facilitate knowledge transfer
- Monitor and control results
 - Establish continuous assessment
 - Document progress and change



Case Study – Wind Safety Playbook

- Started with Operational Controls
- Identified and prepared two key documents
 - Safety Program – defined high-level accountabilities and requirements
 - Safety Process – key safety activities, including communications, hazard identification, observations, and corrective action
 - Other supporting documents followed
- Conducted training
- Implemented metrics tracking and reporting

As a result of the Playbook implementation, contractor safety improved exponentially and corporate safety incidents continued to remain very low.

[Click here](#) for online version of the poster

AWEA Poster Presentation

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**EFFECTIVE FLEET MANAGEMENT:
LESSONS FROM CONVENTIONAL GENERATION**

THE KEY TO SUCCESS: IMPLEMENTING A PLAYBOOK

With over 70 GW of installed capacity, the U.S. wind industry has reached a maturity inflection point. Effective fleet operations are becoming a critical focus. How can operators ensure operational excellence to maximize value of their assets? Playbooks have proven successful in conventional generation fleets to develop and implement successful fleet management strategies. Wind operators can adopt this same approach to drive operational excellence and achieve greater value.

Playbook, noun: an action plan that is proven over time to be both effective and successful

PLAYBOOK: A MANAGEMENT FRAMEWORK

Similar to a sports team's Playbook, conventional generation fleets use Playbooks as a coherent framework to define how the business will operate. By defining their management system, conventional generation operators are able to drive intended results, standardize operations, and encourage continuous improvement.

A Playbook has several components, all fundamental to sound management:

- VISION AND VALUES**
What we aspire to
How we measure success
How we behave
- PLANNING AND MONITORING**
How we improve our business
How we hold ourselves accountable
- OPERATIONAL CONTROLS**
How we run our plants
- ORGANIZATION AND ACCOUNTABILITY**
How we assign accountability

APPLYING PLAYBOOK TO WIND SAFETY: A CASE STUDY EXAMPLE

ScottMadden worked with one wind operator to improve its safety results by developing and implementing a safety Playbook.

- VISION AND VALUES:**
We established an overall vision for safety and distilled it into a single statement—Our work is never so urgent, nor our schedule so important, that work cannot be performed safely.
- PLANNING AND MONITORING:**
We standardized, benchmarked, and set employee and contractor stretch goals for two key metrics. Initiatives were designed and budgeted.
 - Total Recordable Incident Rate (TRIR)
 - Days Away Restricted or Transferred (DART)
- OPERATIONAL CONTROLS:**
We identified and wrote two key safety documents:
 - Safety Program - defines high level accountabilities and requirements
 - Safety Process - defines key safety activities, including communications, hazard identification, observations, and corrective action
- ORGANIZATION AND ACCOUNTABILITY:**
The Wind Safety Manager was named the Safety Corporate Functional Area Managers (CFAM), with program ownership and accountability for results. The CFAM worked together with designated site safety leads to define and implement functional area standards. Together they formed the peer group to drive consistency and determine best practices.

LESSONS LEARNED: IMPLEMENTING SAFETY PLAYBOOK FOR A WIND OPERATOR

The same fleet management concepts proven to work in conventional generation fleets were successfully applied to wind and delivered real results. Wind leadership learned three things through the implementation of a Safety Playbook:

- The Playbook drives consistency and best practices. One message, one experience, one set of behaviors.
- Our best people drive change. Make them accountable to set and implement standards.
- Communicate, communicate, communicate. Discussion of the vision, goals, and standards is what drives new behavior.

As a result of the Playbook implementation, contractor safety improved exponentially and corporate safety incidents continued to remain very low.

Case Study – Wind Safety Playbook

Playbook Applications for Wind Operators

- Operations
- Maintenance
- Business Development/Forecasting
- Construction and Project Management
- Engineering
- Supporting Areas (Supply Chain, HR, IT, Finance)



Lessons Learned – Why Implement a Playbook?

- Drive standardization across the business
- Establish a framework that links parts of the business:
 - Vision and Values
 - Planning and Monitoring
 - Operational Controls
 - Organization and Accountability
- Allow knowledge transfer and retention
- Drive adoption of leading practices
- Track how new programs impact key metrics and results



Q&A



Contact Us

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