



James A. FitzPatrick

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Systematic Approach to Corrective Action Program Improvement at FitzPatrick

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“The Refuel Bridge worked flawlessly. We have NEVER been able to say that! It may seem like a miracle to some, but a lot of hard work by many departments made this awesome performance possible.”

- Manager Planning, Scheduling, and Outages.

“I used to be afraid to be assigned a Root Cause Evaluation, but not anymore. I know that I just need to follow a systematic process and get the right people involved.”

- Maintenance Supervisor



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 - Resolved Concerns (selected examples)



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1998 – Where we Were

- ❑ Repeat Area For Improvement**
 - Long-standing equipment problems that resisted fixes
 - Interdepartmental coordination weak
 - No favored/effective problem-solving approach
 - Problems accepted as “inevitable”
- ❑ Selected Kepner Tregoe to develop skills in Problem Solving and Decision Making**



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Implementation Approach

- Build support for use of a systematic approach**
 - Identify an Executive Champion
 - Communicate successes
- Set the foundation**
 - Identify and prepare process leaders (line ownership)
 - Leaders train a significant number of people on the fundamentals of problem-solving and decision-making
 - Prioritize and start solving longstanding issues



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Implementation Approach *(continued)*

□ Build advanced skills in the organization

- Cause-Effect Relationships - Apollo Root Cause
- Focused training in specific areas – ASM Failure Analysis, etc.
- Latent Human and Organizational Causes – James Reason
- Visual Cause Charting – E&CF, etc.
- Advanced O&P Techniques, Common Cause Analysis – Performance Improvement International

□ Keep Process Leaders Engaged

- Continuing skill development
- Practice on plant concerns
- Engage in new Process Leader training



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Implementation Approach

- ❑ Began 1999 with comprehensive planning**
- ❑ Build the foundation (1999 & 2000)**
 - Train more people on the fundamentals of problem-solving and decision-making
 - Initially engineering and maintenance (1999)
 - Later included operations and other departments (2000)
 - Prioritize equipment reliability issues
 - Each function developed their own list
 - Lists were rolled up by support groups, then plant manager
 - Final list was used to establish project priorities and budget



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Kepner-Tregoe Processes

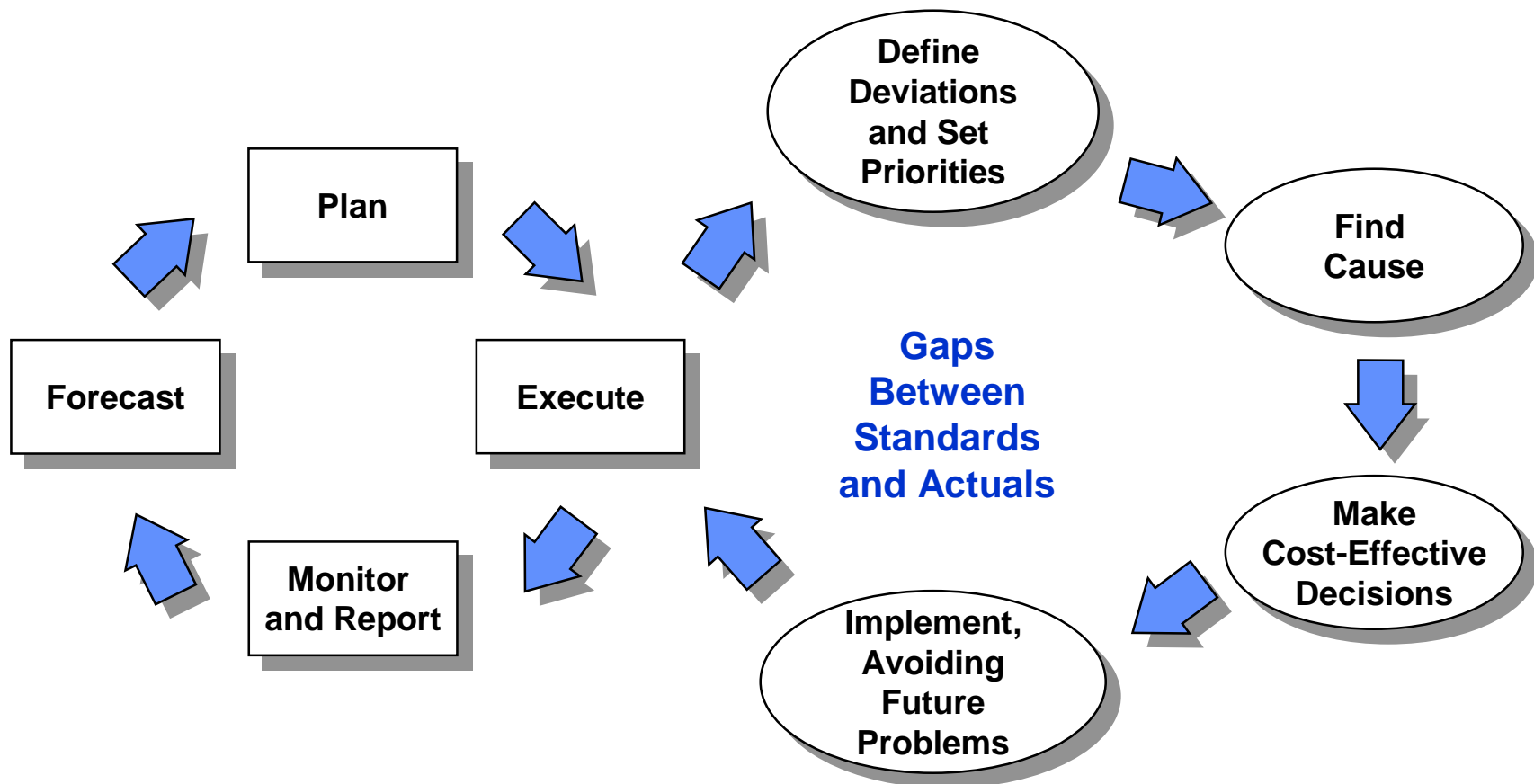
- Situation Appraisal (SA)—To separate complex issues and set priority**
- Problem Analysis (PA)—To find true cause**
- Decision Analysis (DA)—To select best balanced choices that meet needs with manageable risk**
- Potential Problem/Opportunity Analysis (PPA/POA)—To prevent future problems and capitalize on opportunities**



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Corrective Action Process Fit within a Work System





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FitzPatrick Implementation Initial Approach

- Used KT instructors to train Engineering Support Personnel**
- Had early success in the resolution of a SCRAM caused by an Anti-Motoring Circuit Cable Fault**
- Early successes helped gain momentum and approval for certification of additional in-house instructors/facilitators**



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FitzPatrick Implementation Approach/Overview

- Certified five personnel as instructors**
 - Two initially in 1999
 - Three more in 2001
- Trained ten personnel as facilitators**
- Train enough plant personnel to achieve “critical mass” to support use of a systematic process**
- Cost of program approximately \$175K**



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FitzPatrick Implementation Approach/Overview

- Resolved forced outage issues/gained credibility and executive sponsorship
- Gained control of long-standing problems through extensive facilitation
- Integrated Kepner-Tregoe processes into CAP and Engineering activities
- Installed Kepner-Tregoe page on plant Website



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Program Results

- Over 300 formal facilitations performed**
- Fewer/better investigations**
- Fewer recurring problems/lower significance of problems**
- More schedule stability from fewer emergent issues**



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Program Results *(continued)*

- Plant capacity factor from 67% to 97%; on line 100 days more in 2002 than 3 years ago**
- Recent run of more than 400 days**
- Best plant performance in 14 years**
- Culture change/staff confidence that any issue can be handled**



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Program Results/Long-Standing Equipment Problems Resolved

- RHR header over pressurization**
- Low instrument air compressor reliability**
- Refueling bridge low reliability**
- Recirc runbacks due to bus transients**
- Low drywell continuous air monitor
reliability**
- Repeat core spray hold pump bearing
failures**



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Success Factors

- Selected well-respected people out of the line organizations as instructors/facilitators**
- Engineering sponsorship**
- Every K-T workshop for the first 2 years had a department manager or director as a trainee – built commitment by the staff**
- Critical mass of personnel trained**
- Management backing of facilitations**
- Kepner-Tregoe process successes were communicated**



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Recommendations Going Forward

- Provide Kepner-Tregoe training to and reaffirm sponsorship with the new management team**
- Prepare additional facilitators and ensure their availability as a collateral duty**
- Define institutional use of the DA/Project Management and PPA/POA processes**
- Develop more templates and continue integration of Kepner-Tregoe processes into FitzPatrick work systems**



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Staff Comments

- The Kepner-Tregoe processes get the right people working together**
- We need to learn to use process in real time**
- We've lost some of the language at the top—some of the new people don't know from where we started**
- This program is successful because the Program Leaders put themselves on the line**



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Staff Comments *(continued)*

- Now we need to apply process to some bigger issues—like outage management and budget control**
- The Kepner-Tregoe processes get us to the answer and document the answer**
- The training would not have worked if it had been delivered by the training staff**
- DA minimizes disagreement and conflict**