



QUEST AND TRIUMPH: *One Company's Leadership for World Class*

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Aristotle once said, "With regard to excellence, it is not enough to know, but we must try to have and use it." Excellence is like wealth, we know what it looks like, we just don't know how to attain it.

It is a rarity to have the opportunity to slowly witness a company move from average to excellence. As a consultant, we are often engaged for segments of time to guide and assist clients in making the journey toward excellence or World Class, but seldom do you have the chance to watch the entire metamorphous occur so pronouncedly. But more so, it is a testament to the importance of having a foundation of strong and determined leadership when one chooses to embark on such a journey. In fact, this account focuses more on the leadership of change than the actual mechanics of change.

The Quest

The formation of Aera Energy, headquartered in Bakersfield, California, in 1997 came from the merger of Shell and Mobil oil and gas production operations in the state of California. Prior to the merger, Royal Dutch Shell, a Netherlands-headquartered oil and gas company, operated CalResources in California. Mobil, a Fairfax, Virginia based

oil company, had comparable operations, and in many cases, across the road from the Shell locations. The unification of these two strong operations was intended to provide even more strength in a market crowded with large operators and small independents in California. This was a significant strategic move as almost a century of exploration and production of these oil fields has created slow and non-reversible depletion of reserves.

With over 1100 employees and totally self-sustaining with their own Human Resources and Information Technology departments, Aera produces several billion a year in revenue. Daily production is 220,000 barrels of oil along with 77,000 MCF of gas throughout California. They have locations as far north as Coalinga and as far south as Huntington Beach, to include several offshore platforms. If Aera Energy was independently owned, it would be the seventh largest oil company in the US. The acquisition of Mobil by Exxon a few years ago now has Aera being owned jointly by Royal Dutch Shell and Exxon Mobil.

There was considerable effort in the formation of Aera to create a different culture, one that combined the best of both companies. Hundreds of hours were spent on aligning people to the new purpose, vision, and values. The intention was that if you want people to feel part of something special, they need to understand the reasons why and the intended outcome. It is this consultant's opinion that this grounding in a common purpose and vision helped to sew the seeds that would lead to Aera Energy's successful position today.

At the time, I was working for another maintenance consulting and training firm. Two of CalResources' employees, Tracy Strawn and Tom Funkhouser, had attended a public seminar I routinely provided called Total Productive Maintenance (TPM). TPM is a process developed by the Japanese that engages the workforce in asset management and is based on extensive teaming. They both expressed a fascination with TPM but struggled to see how it could be applied to the "oil patch" business. Traditionally, TPM had been primarily applied in manufacturing and the folks at CalResources and, later Aera Energy, did not see themselves as manufacturers (at that time). Needless to say, we were all confident that, with modification, we could apply TPM in some fashion.

An initial one-day overview session with selected mid-level managers, supervisors and engineers was well-received and led to an invitation to begin the first stages with me conducting a Maintenance Effectiveness Assessment. The assessment, conducted shortly after the merger in June 1997, determined the gap between where they were and where they needed to be in regards to maintenance practices.

There was a shortage of benchmark data for oil and gas maintenance operations but we used what we could to at least reference some comparable data to compare performance and costs against. However, it didn't require many benchmarks data points to see that the merged organizations were primarily reactive in regards to equipment service, with about 65% of their maintenance activity on priority one (emergency work).



Physical examination of the equipment showed the effects of years of aged equipment, much of it 70's vintage.

Most of senior management was aware of the problems but not clear as how to change it. Therefore, my initial efforts to recruit and organize a steering committee of senior management to provide vision and leadership support was unsuccessful. Rather than accept this as a set-back, we continued our organizing efforts. At the time, according to Mike Turner, Senior Vice-President, "Developing and planning were the big visible activities. Operations and maintenance were perceived as non-core, not sexy. This changed with the new philosophy of Aera."

Fortunately, we were able to muster a small core group of supporters. One of our first decisions was to change the name of Total Productive Maintenance to Total Process Reliability (TPR), which had been started in Mobil. Also, we dropped the maintenance name to broaden the appeal to non-maintenance people. We felt the approach we intended was broader than traditional TPM guidelines. TPR was now the guiding concept and our challenge was to create a ground swell of support.

On top of all the numerous challenges we faced, there was an even larger one. The design teams, made up of Mobil and Shell representatives, decided that they would completely do away with centralized maintenance and embed maintenance craftsmen in each of the production teams for the new company. The expectation was that the newly titled Reliability Specialist, formerly called an operator, would assume some of the maintenance care for the equipment and there would be no need for



Belridge

a maintenance department or maintenance supervisor for formal oversight. There would be no champion of maintenance outside of production. Although this proved to be a good decision, in the beginning it was a rough journey.

In the beginning, I hesitated providing educational sessions to avoid "sheep-dipping" but the client was fairly insistent that they wanted their newly merged employees to understand the value and new expectation of taking care of their equipment. I was encouraged to continue the two-day training sessions for hundreds of oil field workers and certain support staff.

These two-day workshops were well received by the participants, but at the same time, considerable apprehension and skepticism permeated each of the classes. Every class was full of participants who, although professing their support for the concepts, constantly expressed a reluctance to believe that their management would support the process long term. Silently, I agreed and shared the same anxiety as my efforts to engage mid-level leadership had not



been successful. We had support at the top but lacked support at the Manager of Operations and Process Supervisor levels. In the classes, I would work at reassuring and calming those fears while attempting to motivate them to go out and change what they had direct control over. All the while, I was becoming more convinced that gaining leadership buy-in and, more importantly, long-term commitment, may be an elusive target.

After about the twelfth two-day training session (first with CalResources and then Aera), I began to feel I was wasting the client's time and money in just educating and motivating the population. I was also feeling some degree of failure in my inability to rally the support of senior leadership for such a significant initiative. Changing an environment had to be supported at the top.

A few months into the effort, I received a phone call from Marcel Goedhart, a Royal Dutch Shell maintenance engineer, one of the leads for TPR at Aera, inviting me back for the next wave of training sessions. With considerable reluctance, I basically

refused, stating that continuing to just train without making fundamental changes to the organization and developing a support group of senior leaders was a waste of their time. I informed Marcel that the only way I would consider returning was if they could convince the senior management of Aera Energy to spend a day listening to what TPR was and to get them to commit to active support.

The Triumph

A week later, I received a phone call from the TPR Process Manager saying he had been successful in setting up a one-day TPR Executive Overview that would include the President and CEO, the COO, all the senior vice-presidents, and several directors and senior managers. The rest would be up to me.

Although, we had been engaged with TPR previously, this meeting was the turning point and would launch the journey that would culminate in Aera being recognized as one of the most premiere maintenance organizations in the world. Part of this turn-around was by providing a thought provoking question to the President and CEO, Gene Voiland, which would win him over and produce a strong champion and sponsor for the process even to this day.

The meeting was successful, but perhaps two things were most remembered by those who participated. One was when I asked Gene Voiland, after using an aircraft metaphor to illustrate reliability, if his equipment was an airplane, would he fly it? Gene nervously laughed. I then told him when he had the confidence to "fly" his equipment, we had reached our goal. It was a question that, to this day, Gene still mentions to his guests, who travel from all over the world to view his operation.

The other turning point was when I led an exercise as to what leadership sounds like. In other words, how does a leader sound when showing support? I then led an exercise brainstorming what leadership looked like. The differences were stark and elicited considerable ah-has among the leaders in the room. There was a realization that leadership had to do less with what you say and more as to what you do. Peter Drucker, noted management expert, once said, "Management is doing things right; leadership is doing the right things."

Ed Besenfelder, who at the time was a Manager of Operations at Belridge, stated, "Shortly after forming Aera, senior management gathered all its employees together for meetings on Aera's Purpose, Vision and Values. At this time, Greg Cox, the Chief Operating Officer, rolled-out our current vision of Total Process Reliability and drove home the fact that excelling in Equipment Reliability was the key to Operational excellence. It was the first time in my 20+ year career in E&P to hear senior management talk about the need for maintenance excellence. This indicated to me that Aera Energy LLC was changing our approach to the oil business."

We were able to charter our steering council that day. The steering council even held meetings in the field at the equipment and worked on the equipment to learn more about it and to show their support for TPR. It was a pretty powerful message to operators when they saw the Chief Operating Officer, Greg Cox, one of our initial sponsors, in a Tyvek suit, marking lube points and gages on a compressor.

After the formation of the Corporate TPR Steering Council, we began to form

Steering Committees at each of the major assets (business units). We helped them charter each by setting vision, mission and goals. We also outlined the Key Performance Indicators (KPIs) we would use to track success.

Belridge is the largest of Aera's operations and produces about 60% of the total volume for the company. One of the early adopters was Mike Turner, at that time, the Vice-President of Operations for Belridge. His leadership would be tested when in early 1999, the price of a barrel of oil plummeted to a twenty-year low. In many cases, the lift cost (cost to produce a barrel of oil) was



Belridge, the largest field in Aera

more than the revenue per barrel, resulting in many operations coming close to being in the red. This placed TPR in a very vulnerable position. At that point, we were aggressively conducting Coordinator Workshops (hands-on training on the equipment) of four-days each. We were also in the process of adding Reliability Engineers to the staff to support the maintenance and reliability efforts. Logistic Specialist positions were being filled to support the planning and scheduling of maintenance activities and to support the new enterprise information management system, SAP. Mike stated, "One huge enabler



Manager of Operations (r) and Supervisor (c) congratulating operator on certifying equipment for Autonomous Maintenance at Ventura operations

to our success was the formation of the SAP implementation team, Sequoia, and the strong operations and maintenance with SAP using the PM module.”

Mike Turner, new to the VP role, exercised leadership by insisting that TPR efforts continue full-blast. He said he believed that the price of a barrel would not stay low forever and that by cutting back spending on maintenance when business was bad was not the new way. This move would later posture Belridge to lead the company’s TPR efforts. By resourcing support positions, he not only sent a powerful message to the organization but he also staffed it with high quality people who would go onto develop World Class maintenance practices. Belridge would later pioneer many of the TPR practices within Aera such as Condition-Monitoring, Root Cause

Failure Analysis, PM Optimization, Equipment Improvement Teams, and so forth.

Fortunately for Aera, Belridge was not the only operation to have visionary leadership supporting TPR. First at South Midway Sunset and then at North Midway Sunset, Andy Anderson was one of the original members of the Corporate Steering Council and a major supporter. In fact, during the first years of the Annual TPR Audit, Andy was chosen as the Most Supportive Manager of Operations for three consecutive years (he was recently promoted to Vice President of Operations). He participated on the TPR Steering Council for the company, his own operating unit’s steering committee, headed up a Leadership Group within his unit to review strategy and also served as a permanent or ad hoc member on many of the



Process Supervisor (r) helping to 5S a mechanics' shop at Huntington Beach

focus teams. At any given week, Andy would be in multiple meetings on TPR or providing rewards and recognition for those who had accomplished specific goals.

When we looked at superlative unit leadership, Andy exemplified classic characteristics. He was actively involved, leading by example while collaboratively setting the direction and goals. He stayed engaged without micro-managing the process. North Midway would later produce the most significant cost reductions in Aera. This was achieved, in no less part, from Andy's leadership and the strong support staff of talented supervisors and reliability engineers.

Reliability Engineers were key to the

success as well. Starting with the Senior Reliability Engineer at Belridge, Steve Fox, and Rich Colvin at North Midway, to name a few, this group would become the champions and technical experts to support a solid effort.

We were able to make even more headway when in 2000 I began conducting one-day workshops for Change Leaders. This workshop was designed to show those people directly involved in TPR how to influence others to support the process. We had a year-to-year plan starting in 1998, but in 2000, we put together a five-year plan that was adopted by the Steering Council. Aera also began aggressively applying Lean



Vice-President of Operations (l) and Manager of Operations (r) inspecting equipment as part of a Leadership Audit in Ventura

Manufacturing concepts to TPR.

Another major advance in leadership was the assignment of Ed Besenfelder as TPR Process Manager and Chris Majusiak as TPR Process Supervisor for Aera. This duo would provide the coordination of most of the major changes within TPR from 2000 to today. Having had the opportunity to work with these gentlemen for almost five years, I have seen them exercise Change Leader actions. Since they had to work with their colleagues, their sole tool was their ability to influence and persuade. Ed and Chris had to lead as Change Leaders, convincing others to take a particular action. Not only that, but both were

visionary enough to recognize the potential in maintenance practices they were not doing and when I exposed them to a new concept or they read or heard from another source, they would eagerly bring those practices to bear in Aera.

Remarkably, the traditional suspicions toward corporate support staff was not evident towards these individuals because they chose a role of "How can we assist" rather than "Here is what you need to do." They would garner enough respect that even when they had to assume the role of auditor on the Annual TPR Audit, people would listen. Having also served as a member of the audit

for seven years, I observed them approaching the audit with “Where can we find the best practices to share with the others” or “Who is doing something really good to recognize.” This changes the tone of the audit from “Gotcha” to “I caught you in the act of doing something outstanding.” For this reason, the annual TPR audit, although lengthy, lasting several weeks in length, is looked for and expected as a means to ensure all the units have a standardized approach. But it is also a means to “showcase” accomplishments throughout the year and spread Best Practices throughout the company.

Mike Turner said, “Aera’s dual accountability with process leaders accountable for designing and line managers accountable

for implementation was key. All are aligned with compliance measures. If many teams are not meeting the compliance measures, it is a process owner problem. If it is a couple teams, it is a line issue.”

We know that audits drive behavior. The thing we wanted to do was to avoid the classic punitive nature of the audit and use it more as a constructive means to collect best practices and reinforce the behaviors we wanted. Finding excellent practices to emulate became a major priority for the audit process. This has accomplished that.

Manager of Operations (l) and Senior Vice-President (r) Presenting a plaque and Certification of Recognition for TPR efforts



When California operations of Mobil and Shell merged, their emergency maintenance rates were as high as 65%. In 2005, it had been reduced to 3.5%. Aera has estimated that maintenance costs are down by at least 25% from 1997 by using the following:

- Root Cause Failure Analysis using Cause Mapping
- Development of procedures and Process Guides
- Preventive Maintenance Optimization
- Operator Condition-Monitoring
- Operator Basic Care or (Autonomous Maintenance)
- Equipment Improvement Teams
- Tactical Teams
- Focus teams
- Integrated Supplier Management of Inventory Control
- Steering Committees and Councils
- Daily and Weekly monitoring of KPIs
- Process Team Review of Maintenance Activities
- Internal Auditing
- External Auditing
- Extensive training and education
- Best Practice Sharing sessions (Super Wednesday)
- Lean Manufacturing Techniques
- Full utilization of enterprise information management (SAP)
- Use of condition-monitoring processes

But the most significant achievement was the engagement and constant sustainability of a corporate initiative for maintenance and reliability. This was attributed to the strong leadership of those listed and even more to those who were not listed in this account.

Aera has no doubt mastered the SAP enterprise system better than any other company I have seen. Chris Majusiak told me, "By having a background in Operations, the SAP implementation team realized the value of having accurate, timely maintenance data for all of our equipment. We approached this project with an Operations mindset and not an IT project. We quickly realized that we had an opportunity to change the status quo, standardize the way we use our CMMS (SAP PM Module) and implement significant changes to our existing processes. Additionally, we began to realize the value of having an integrated

system, and how to leverage it to its fullest extent. Looking back over the past six to seven years, SAP has been a huge enabler in our journey to become an industry leader in Total Productive Maintenance and our quest for world class Total Process Reliability, which was a vision of the Aera organizational design team! Little did we realize in 1998 that the foundation we laid then would continue to benefit us for years to come."

Aera Energy has continued to reduce its maintenance costs significantly since 1998. For proprietary reasons I can not share those numbers, but I can say that it was a major achievement, especially in this industry.

Shell, as one of Aera's parents, continues to send representatives from across the world to benchmark Aera to learn how they have ran such an efficient operation. I personally escorted twenty-two managers and engineers from Shell's European operations



Senior Vice-President (r) viewing recent TPR efforts in Coalinga

to spend a week at Aera. One told me “I have been with Shell for over thirty years and this was a lifechanging event for me.”

Aera Energy had the distinction of becoming the first oil and gas operation to win the North American Maintenance Excellence (NAME) award in 2002, awarded to the Belridge unit. When North Midway, under Andy Anderson’s leadership, applied for the 2004 award, they not only won, but were informed they had the highest score ever received for the award.

Each year, in October, I head out to California to join our audit team. I look forward to the maturity I see from year to year, asking myself, “Just how much better

can they become?” And each year they answer that with impressive actions and results. In November, I report out the audit findings and recommendations to Gene Voiland, the CEO and all the VPs, several directors, and Manager of Operations. Gene, as he did eight years ago, has a keen interest in how the TPR process is going. He responds to recommendations and will ensure those recommendations are acted upon.

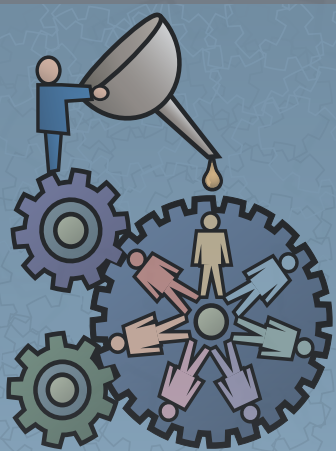
He will often give me an update to the question, “If your equipment was an airplane, would you fly it.” He will chuckle and tell me he is flying.

Due to its Lean Manufacturing implementation efforts and the move toward

seeing itself as a manufacturer, Aera Energy has been recognized as the leader in Lean implementation in its industry. It has partnered with Toyota in applying the concepts to many parts of its business. In response to what are we doing to take this to the next level, Mike Turner stated, "Aera's first priority was to improve our process reliability and stabilize our systems (i.e. get everyone on the plane to quote Gene's analogy). We have accomplished this successfully across the organization and have seen significant benefits. Obviously to stay on the top, we need to be constantly improving and looking for the next opportunity. We have been focusing on Lean Manufacturing for the last several years and have this now implemented in all our core processes. We feel this sequential effort of leaning out our now reliable processes accelerates our journey to excellence (i.e. making the airplane run more efficient with less waste). We have used the traditional manufacturing industry as a guide to our vision as process leaders of the oil and gas."

After being inspired by Aera's TPR successes, Shell had asked me to assist in implementing TPR throughout its 110 Exploration and Production operating units across the world. Two representatives from corporate headquarters in the Netherlands, Allan Grieve, Total Reliability Team Leader, and Stewart Officer, Maintenance and Integrity Team Leader for Shell participated in the 2005 TPR audit at Aera. Stewart Officer stated, "The learning's and practices we observed at Aera were at a level to which we aspire globally and emphasized the extent of the journey we have now embarked' When I was asked by the editor of Maintenance Technology and Ed Besenfelder at Aera to write this account, I knew my most difficult task would be how to share such an accomplishment without mentioning all those involved. But as Harry Truman once said, "It is amazing what you can accomplish if you do not care who gets the credit."

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