EMERGING RISK:

Leadership to Address the Challenges of Elevating Inspector Performance by Utilizing Human Factor Technologies

By: Dan Lorenz, P.E., Joe Knows Energy

Introduction:

As the Utility Industry continues to replace its aging infrastructure, a Risk is emerging. The Risk: replacing pipelines in congested neighborhoods, with less experienced contractor crews, supervisors and inspectors, in an increasingly complex underground world.

Front line inspectors and construction supervisors who are selected with a focus on the Human Factors Technologies outlined in this article, offer the best prospects for achieving high performance and reliability.

Recent quotes from clients:

"1/2 of our 3rd party inspectors, 1/3rd of our internal supervisors, and ½ of our contractors are under performing, we are not sure what to do about it!"

"50% of the workforce is eligible for retirement in the next 5 to 7 years!"

Figure 1. Government agencies are responding (NGA Online Newsletter, November 2018)

Front Line Leadership and Human Factors Technologies Raising Performance:

Utilizing the following four Human Factors Technologies, we can raise the performance and reliability of the Front-Line Leaders. Typically managers spend most of their time with" C" performers, trying to correct poor performance. Figure 2 below shows that by understanding how the top performing front line leaders think, we can select those professionals who have the potential to perform at a high level and focus our time with "B" and "A" performers.

- Identification and Selection- Behavioral Analytics and Benchmarking exists that can consistently predict how someone will perform based upon how they think relative to a "high performer".

"Remember, the order is always People, Process, and then Tools."

- Training Behaviors -Scenario based training, utilizing the equation Event + Response = Outcomes, prepares front line leaders to respond under pressure.
- Motivation - Inspectors desire support, treating them as Valued Team Members by utilizing technology to provide transparency, results in attracting those who are accountable.
- Communications Technology – Now we communicate with a Platform of Pre-Qualified Professionals who can be selected based on the best fit.

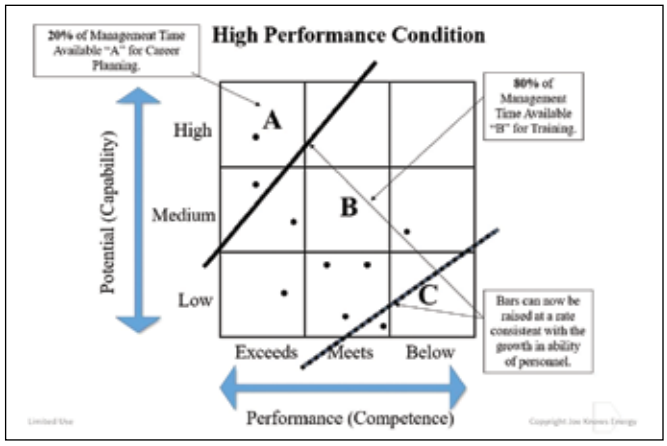

Figure 2. High Performance Condition Case Studies:

Case Studies

The best way to demonstrate how these Human Factors Technologies are applied, is through case studies and lessons learned. Following are two case studies where Human Factors Technologies were utilized to elevate inspection team performance and reliability, producing more predictable and measurable outcomes.

CASE STUDY #1:

This client has grown their inspection team over the past five years to provide oversight during their Leak Prone Pipeline

replacement projects. Recently they decided to focus on improving the overall performance of their twenty 3rd party inspectors, in response to the Public Service Commission increasing requirements and the perceived lack of transparency and accountability.

Assessment Benchmark

Utilizing behavioral assessment tools, identifying and benchmarking high performers, we identified that the critical behaviors, for this company and this position are "**Theoretical**" and "**Regulatory**". This means that the people who best performer this role for this company are those who are high Theoretical, loving to learn, and are high Regulatory, hold themselves and others accountable.

This is because the client has the inspection team performing primarily quality assurance, requiring learning the companies, always being updated, Company Construction Standards, and holding others accountable. Note, at this company, the Foreman, an internal employee, is responsible for coaching the contractor.

With over 400 candidates considered, with 50 percent taking the assessment, the selected inspectors had a **Regulatory** score range of **58-83** with an average of **69** as compared to the average assessment of 34 with 2/3rds of the tested population in the 28-40 range. Their **Theoretical** score range of **66-83** with an average of **76** as compared to the average assessment of 42 with 2/3rds of the tested population in the range of 30-54.

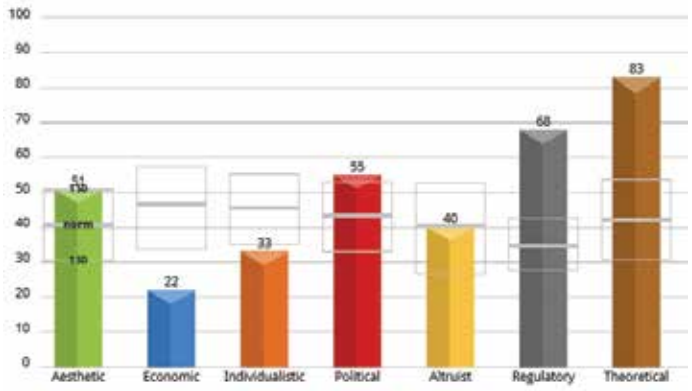

Figure 3. Critical behavioral factors for this company and this position were determined to be Theoretical and Regulatory

Emphasis Cultural Fit

There are 4 filters that we use to determine a candidate's fit. These filters are Technical Knowledge, Assessment of how they think, Feedback on Performance, and Culture Fit.

When considering candidates, we seek to understand what relevant technical knowledge they have given their experience and certificates. Second, we explore their assessment, do they think like a top performer in this position? Then we ask their previous employers to score their performance relative to established Key Performance Indicators (KPIs), fourth, how do they fit the company culture.

The lesson learned, given this client's desire to have inspectors who are committed to longer term employment of 5+ years, was we made Cultural Fit our second filter, behind Experience, but ahead of their Assessment and Feedback. The candidates comfort level living and working in the region for this company, was a primary driver in the selection process. For example, Al had less gas industry experience than other candidates, but was selected based on his cultural fit and perceived long- term commitment to living and working in this region.

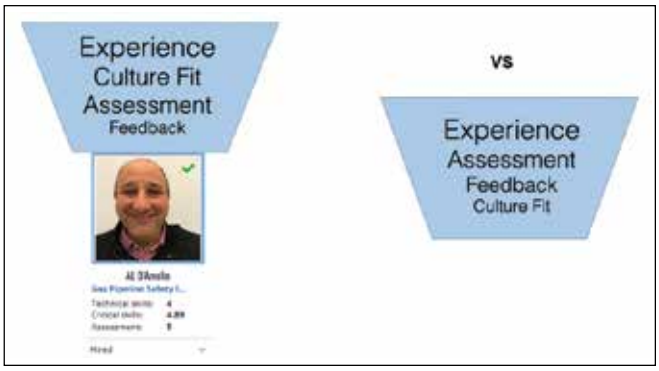

Figure 4. Candidate Al was selected on his cultural fit and long-term commitment to living and working in the region

Adjusted Key Performance Indicators

We have established standard Key Performance Indicators (KPI's), based on a broad range of responsibilities for inspectors, to measure their performance and provide feedback. In general, we find that most clients, due to the increasing demands on inspectors, are supporting their inspectors with others, therefore requiring the KPIs to be adjusted to fit the role. For example:

Key Performance Indicators:

General

1. Understands and Delivers on Goals
2. Clearly Defines Expectations
3. Influences
4. Identify and communicates risk
5. Consistently documents
6. Team building
7. Public concerns
8. Dedicated
9. Develop Self
10. Develop Others

Specific to fit role

1. Documentation
   a. Photos
   b. Reports
   c. Mapping
   d. Time sheets
2. Inspection
   a. Issues and skill gaps identified
   b. Highlights critical performance areas
3. Communication
   a. Foreman advised of critical events
   b. Public directed appropriately
   c. Contractor communication appropriate
4. Training
   a. Acquires OQ's
   b. Relates lessons learned at team meetings

Measure Success

Measuring success of the inspection team is not always intuitive and needs to be quantified, with collection of data automated. Many factors should to be considered when determining the measures of success. What are the regulators looking for? What can the inspection team control and influence? What measure will help determine needed areas of improvement? Should we measure all results vs just the negative ones? Which measures can be predictive vs lagging?

Once the measure is selected, it is important to automate collecting this information, in order to capture data when everyone gets busy. Automating this information also allows it to be further evaluated in order to discover non- intuitive factors.

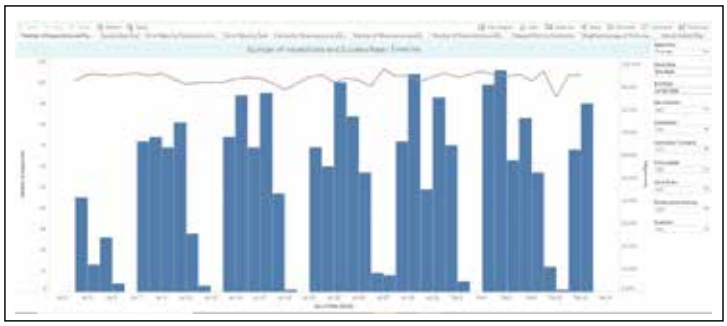

Figure 5. Automating collection of information allows for further evaluation and measurement of impact of Human Factors on performance outcomes

Compensation Structure Clarity

When building a high- performance inspection team, it is important to define how pay rates are determined and adjusted over time as well as being consistent and transparent.

Figure 6. Clarity of compensation structure is important when building a high-performance inspection team

CASE STUDY #2:

This client wanted to build a new inspection team in response to poor performing contractors, increasing workload, and regulatory oversight.

Assessment

Utilizing behavioral assessment tools, identifying and benchmarking high performers, we have concluded that the critical attributes for this company and this position are **Empathy** and **Practical Thinking**. This is because the client has the inspection/ consultant team performing coaching. With over 400 candidates, and 50 percent taking the assessment, the average scores of those selected are Empathy **8.7** and Practical Thinking **8.4**. These compare to an average score of 6 for the baseline assessment population. The candidates selected possess superior ability to read people, and leadership qualities.

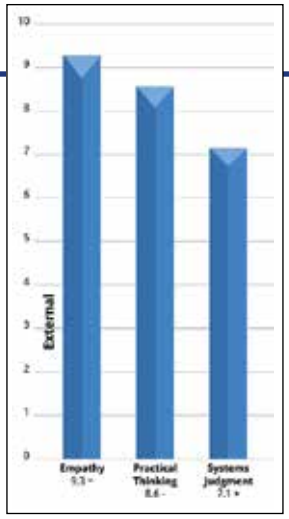

Figure 7. Critical attributes for this company and this position are Empathy and Practical Thinking

Understanding Employment Market

What is the reputation of the owner, how do other employers treat similar employees (work hours, pay, etc.), how many qualified candidates exist in the market? In this case, all of the market factors worked for us, allowing us to hire very strong candidates, and 90 percent of the candidates offered positions with our client accepted.

Integrating Existing Leadership

The leader of this team decided to involve the managers in the process from the start. Once the candidates were vetted, using the platform and known requirements, the managers were engaged in the phone and face to face interviews of candidates. This helped to rapidly achieve clarity about what "fit" the management was looking for.

Common Clear Expectations

Once the identification and selection process are completed, another just as important process starts. During the onboarding process, clarifying expectations must align with what has been promoted and reality. Investing in a common understanding, with the new hire and the manager, of the; **Chain of Command**, the **Goals of the Organization**, how their **Performance will be Judged** using the KPIs, their **Assessment** including their strengths and blinds spots, and how to **respond to Critical Events** leads to a more rapid integration and likelihood of success.

Conclusion:

So far, the lessons learned from our work with gas industry clients indicate that **NOW** is time to take advantage of Human Factors Technologies to elevate performance and reliability and produce more predictable results. Remember, the order is always People, Process, and then Tools.

ABOUT THE AUTHOR:

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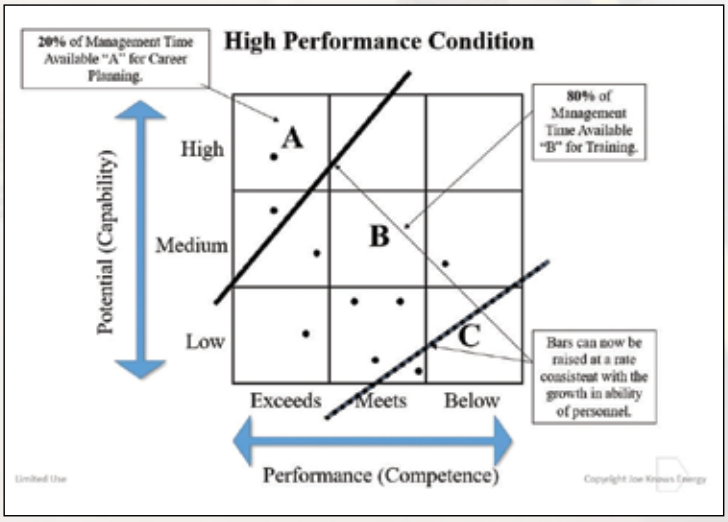
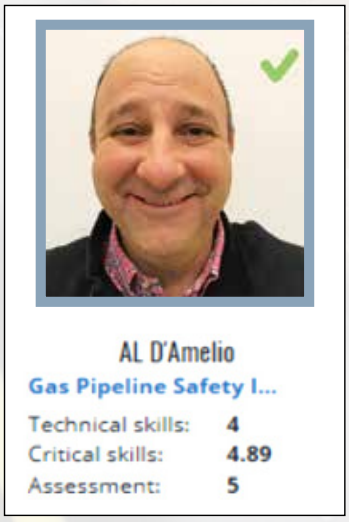
PEOPLE then PROCESS then TOOLS





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