

## Why the Prevailing Wisdom on Change within the DOE/NNSA Nuclear Weapons Complex Won't Produce Organizational Transformation

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In a recently published paper entitled, *A Precision Model for Organizational Transformation within the DOE/NNSA Nuclear Weapons Complex* I described a model called the Breckenridge Equation that could be used as the basis for organizational transformation within the DOE/NNSA Nuclear Weapons Complex. I have had numerous people ask me to provide some concrete examples of how the model could be used to move beyond the prevailing wisdom and common practices associated with assessing and changing performance issues within the DOE/NNSA Nuclear Weapons Complex. This article presents two examples that are important to both Federal and M&O contractor organizations.

### COI ↔ POI ↔ ROI = Current Results

The four terms of the Breckenridge Equation (shown above) work together to create and maintain a Laboratory's or Plant's unique culture. More specifically, the day-to-day operations, behaviors, and interactions between managers and staff members occur as patterns-of-interaction (POI) within the context-of-interaction (COI) that is composed of an organization's structures, systems, and resources. The interaction of POI and COI function like a group-learning process that creates a repository-of-interaction (ROI) that becomes the shared assumptions, beliefs, values, and attitudes that are the foundation of an organization's day-to-day operations. Over time, the first three terms of the equation settle-down on a configuration within the larger context-of-interaction of nuclear and non-nuclear international security issues in the external environment, and the interaction of the first three terms produces the Current Results, which act like a "social mirror" that reflects the cultural norms of "how it's done around here."

In the paper I argued that if the Weapons Labs are going to continue to evolve toward their new role as National Security Labs they must learn to "see" their day-to-day operations differently by using the four terms in the Breckenridge Equation as a "lens" through which to identify the barriers to organizational transformation. Currently, the prevailing wisdom and common practices associated with assessing and changing performance issues within the DOE/NNSA Nuclear Weapons Complex is to develop corrective actions and change strategies that focus almost exclusively on the COI term, without addressing the behaviors, ways-of-working, attitudes, and beliefs associated with the POI and ROI terms which are the key to organizational and cultural transformation. This article presents two examples of assessments conducted by contractor-based and Federal personnel that: a) correctly identify the causes of organizational issues as being "cultural" as defined by the POI and ROI terms of the equation, but b) recommend corrective actions designed to "fix" these problems that are limited to the COI term. The bottom-line of the analysis presented here is that even if the recommendations in these two reports were implemented *as written*, they would not result in the kind of positive change required to correct the "cultural" issues identified by findings in these assessments. In other words, changes to COI are *necessary*, but not *sufficient* to create the kind of organizational transformation needed across the DOE/NNSA Nuclear Weapons Complex.

The first example is the National Research Council Report entitled, *Managing for High-Quality Science and Engineering at the NNSA National Security Laboratories (NRC Report)* published in February 2012. The *NRC Report* identifies the root cause (origin) of excess formality of operations as a lack of *trust* between Federal and M&O contractor personnel. The study committee's focus on the

“broken” and “dysfunctional” nature of the NNSA/M&O contractor *relationship* is of enormous positive import and has the “ping” of truth about it. The *NRC Report* identifies two key elements of trust: reliance and confidence. The report states that, “*Reliance* means believing in the other party’s character and ability: can the other party be believed? Does the other party know what he/she is talking about? Do I have faith in the other party’s knowledge and expertise? *Confidence* means believing that I can depend on something in the future regarding another individual or group. Can I rely on the other person to do what they said they would do? Based on extensive discussions, the study committee thinks that if it were to ask NNSA, the Laboratory managers, or the scientists and engineers at the Laboratories these questions, none would answer in the affirmative.” (*NRC Report*, page 26). The chart below shows the findings and recommendations from the *NRC Report* binned into the terms of the equation. It is important to note that the behaviors and attitudes that characterize the kind of lack of trust and “broken” and “dysfunctional” relationship described by the *NRC Report* are described by the POI and ROI terms of the equation.

| NRC Report Categories                      | Find | Findings |     |     | Recs | Recommendations |     |     |
|--|------|----------|-----|-----|------|-----------------|-----|-----|
|  |      | COI      | POI | ROI |      | COI             | POI | ROI |
| Contracts                                  | 2-1  | X        | X   | X   |      |                 |     |     |
| Research Base and Evolution of the Mission | 3-1  | X        |     |     | 3-1  | X               |     |     |
|  | 3-2  | X        |     |     | 3-2  | X               |     |     |
|  | 3-3  | X        |     |     | 3-3  | X               |     |     |
|  | 3-4  | X        |     |     |      |                 |     |     |
|  | 3-5  | X        |     |     |      |                 |     |     |
| Broken Relationship                        | 4-1  | X        | X   | X   | 4-1  | X               |     |     |
|  | 4-2  | X        | X   | X   | 4-2  | X               |     |     |
|  | 4-3  | X        | X   | X   | 4-3  | X               |     |     |
|  |      |          |     |     | 4-4  | X               |     |     |
| Management of S & E at the Laboratories    | 5-1  | X        |     |     | 5-1  | X               |     |     |
|  | 5-2  | X        |     |     | 5-2  | X               |     |     |
|  | 5-3  | X        |     |     |      |                 |     |     |
| <b>Total</b>                               |      | 12       | 4   | 4   |      | 9               |     |     |

Notice how all three terms (COI, POI, and ROI) are identified in findings 4-1, 4-2, and 4-3 as the causes of what the *NRC Report* calls the “Broken Relationship” category. Consequently, one would expect to see these issues reflected in the arena of contractual activities of finding 2-1 where DOE/NNSA HQ, DOE/NNSA Site Offices, and M&O contractors interact on a day-to-day basis as M&O contractors perform the work defined by the contract, and DOE/NNSA personnel provide both mission-program and contract-related oversight. But also notice that the recommendations proposed by the study committee only include the COI term of the equation.

The second example is a *Special Report* produced by the DOE Inspector General on the Y-12 Security Breach (*DOE IG Y-12 Report*) issued in August 2012. The chart below shows the findings and recommendations from the *DOE IG Y-12 Report* binned into the terms of the Breckenridge Equation.

| DOE IG Report Categories           | Findings |     |     | Recommendations |     |     |
|------------------------------------|----------|-----|-----|-----------------|-----|-----|
|                                    | COI      | POI | ROI | COI             | POI | ROI |
| Alarm Response                     | X        | X   | X   | 8-X             |     |     |
| Maintenance and Security Equipment | X        | X   | X   |                 |     |     |
| Compensatory Measures              | X        | X   | X   |                 |     |     |
| Interpretation of Existing Policy  | X        | X   | X   |                 |     |     |
| Communication                      | X        | X   | X   |                 |     |     |
| Funding and Resource Allocations   | X        |     |     |                 |     |     |
| Contract Management                | X        |     |     |                 |     |     |
| Federal Oversight                  | X        | X   |     |                 |     |     |
| <b>Total</b>                       | 8        | 6   | 5   | 8               |     |     |

As shown in the chart above, the interviews conducted by DOE IG personnel and the review of supporting information pertinent to the sequence of events on the night of the breach produced an account of the incident that identified the majority of the causes as being “cultural” by virtue of the fact that they were described by the COI, POI, and ROI terms of the equation. But the recommendations that the DOE IG made to “fix” these problems were limited to the COI term. The report is replete with examples of the “gap” between POI and COI and issues associated with ROI and the Current Results term acting like a social mirror that defines cultural norms of “how it’s done around here,” but these cultural issues remain unaddressed by the report’s recommendations.

The *DOE IG Y-12 Report* indicated that this was only a preliminary assessment, and that NNSA management agreed to implement the report’s findings and had outlined a number of other corrective actions that had been initiated or completed as the publication of the report in August 2012. The report went on to state that NNSA would be “...conducting a complex-wide assessment of physical security to identify any corrective measures necessary to protect the nation’s most sensitive nuclear materials.” If the four terms of the equation were used as a “lens” through which to view this subsequent complex-wide assessment, it is likely that it would reveal the same pattern of diagnosis and COI-biased corrective action shown on the charts above.

So to conclude, changes to COI are *necessary*, but not *sufficient* to create the kind of organizational transformation needed across the DOE/NNSA Nuclear Weapons Complex. Trying to create positive change by reorganizing, changing leadership, changing contractors, implementing new management programs, installing new equipment, building new facilities, replacing and updating IT infrastructure, issuing increasingly prescriptive DOE Orders and directives in the hopes of improving performance, retraining managers and staff – again, and having Laboratory support services functions develop increasingly prescriptive internal policies and procedures for Lab managers and employees to follow (all of which are associated with the COI term) does not address the root cause “cultural” issues that are found in the other three terms of the equation. The key insight that the Breckenridge Equation contributes to moving beyond the prevailing wisdom and common practices associated with assessing and changing performance within the DOE/NNSA Nuclear Weapons Complex is that organizational culture is composed of *all four terms* working together at the same time to create and maintain organizational culture, with each term being a distinct (but interdependent) factor that interacts with the others to produce an organization’s financial and non-financial results. Using the equation will enable leaders to more effectively exercise the *unique* role of leadership which is to create, manage, and transform organizational culture.