Building a Positive Safety Culture in a Regulatory Organization

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Speaking notes:

Compliments to the Marine Board and BSEE for organizing this session that has significant implications for all of us who have responsibility for regulating and operating industries and activities vital to our nation's economy, security and future advancement.

Many of us in this room have for years been thinking about safety culture and high reliability. Some of us in the federal government have joined together in an informal high reliability round table to promote discussion and learning; the most recent meeting was this January hosted by our colleagues at the Pipeline and Hazardous Materials Safety Administration (deputy administrator Jeff Wiese). I've learned much from these discussions as well as through interactions with other colleagues in industry and the academic community. Most recently I've spent almost two years conducting intensive safety culture assessments learning directly from the managers and staff who do the day to day operations and design of these demanding, hazardous missions. From these experiences I've shaped a few empirically informed observations which I offer today; much credit goes to those who have generously shared their knowledge (such as Dr. Roberts); responsibility for these observations however is purely mine.

Observations

1. All organizations have exquisitely evolved to produce exactly the results they get; the same can be said about regulatory regimes.

2. Most senior managers are competent technical professionals, action oriented, performance driven, convinced they are doing a good job, and see performance concerns as indicators of staff recalcitrance or lack of commitment. Many view organizational development as the stuff of HR, and culture as soft stuff therefore not worthy of their time nor study (which is often code for they don't understand it and are afraid of appearing inept, for fear of admitting vulnerability).

3. Most staff are trained and motivated to do a good job; they think management is out of touch and don't understand the work or work environment. Staff see many organizational systems and "improvement initiatives" as impediments or a "flavor of the month"; and generally don't trust management, regulators or institutions. Often they don't understand the organization, don't understand factors beyond their local environment, don't understand how their work fits into the bigger picture, often feel unappreciated, and many trend toward a paternalistic world view that it is someone else's job to fix things.

4. Regulators tend to see the work as a function of regulations and have little concept of the work environment or factors that drive day to day behaviors. Economics, stakeholder influence, and management competencies & incentives as factors that drive organizational behavior are often 'beyond the pale' of regulatory consideration. Seasoned regulator staff often have an innate sense that something is missing from the regulatory equation but don't have the vocabulary, concepts or frameworks to express it. Often they are afraid to give voice to these ill formed feelings due to fear of seeming unprofessional, naïve, disloyal or experiencing forms of subtle retaliation.

Safety Culture assessments can reveal fundamental truths about many of today's complex socio-technical systems; foremost being that those responsible for managing such systems know little about the *socio* aspects of their systems. Well designed, empirically derived safety culture assessments can reveal that what many <u>think</u> they know about organization and management (and as a result how they behave) has little to do with the reality of contemporary complex organizations**.** Instead - managers, regulators and policy makers continue to live a mythology of bygone eras. Central to this mythology are insidious cognitive fallacies, erroneous beliefs and assumptions such as:

- Organizations are mechanistic systems that can be designed and controlled with top down direction.
- Organizations are homogeneous definable entities (*rather than extensively inter-related open system networks that predominate today's landscape*)
- Expert technical knowledge is the primary determinate of success or failure
- Safety is concerned with protecting workers from workplace hazards; technical processes and institutional controls belong within other domains of attention.
- It is possible to have full knowledge of organizational & technical systems, and sound management decisions can predict the outcome of predetermined courses of action.
- Problems in performance or safety are a result of failures of those performing operational work – they did not, could not or refused to carry out the instructions from those above them in the organizational hierarchy.
- Sufficiently prescriptive regulations and harsh non-compliance sanctions can prevent serious accidents or performance failures.

Over the past decade the concept of Safety culture has evolved from public obscurity, a topic of rarified interest to a small cohort of academic researchers, to become the "cause de jour". Fueled by events such as the Davis Besse nuclear reactor head event, BP Texas City Refinery, the Macondo well, and Fukushima Daiichi, today safety culture is an established phrase in the public, media and political lexicon. (as evidence --- Google search as of Sunday yielded 1,240,000 results – Google Scholar almost 30,000 academic papers.) The safety culture of public press is more myth and marketing hype than reality.

This is a good news/bad news situation. The good news is that Safety Culture gives us a new set of lens with which to view organizational dynamics to better understand the factors that influence organizational outcomes. The bad news is that safety culture has become popularized as a 'commodity' to be sold, bought and implemented. To many managers safety culture is another initiative, a problem for which there are corrective actions, something to fix and then go on to the next problem. To many regulators, safety culture is the most recent thing to prescribe,

audit, inspect and enforce. Understanding cultural dynamics offer potential for conceptualizing what it means to operate and regulate current & next generation industrial networks. Yet we face creating another myth; if only the regulator would prescribe a requisite safety culture, and enforce such; and if only operators/corporations would create safety cultures, all would be well and no bad things would happen.

Transitions: *these are some the key shifts in our understanding that are preconditions to changing our behaviors and thus outcomes*:

- From culture as a property - to culture as a manifestation of relationships, mental models and communication - a *resultant* not an *antecedent*
- From closed systems, to open systems, to ecologies of networked communities
- From organizations as monolithic culture - to communities of many subcultures
- From regulator as preventer - to regulator as society's monitor of reasonable assurance. (*collaborative governance*)
- From regulator as compliance enforcer - to regulator as agent of influence with deep knowledge about the regulated industry and the factors that drive performance.

Proposal for a path forward:

Principles and concepts of high reliability and safety culture are well established in the literature as well as in practice in many sectors. Aviation and nuclear technologies have years of applied experience; health care has many good examples; the electric transmission industry is actively engaged in these pursuits. The 2010 International Regulators Conference provided 12 guidelines for assessing and improving offshore safety programs; these provide an excellent beginning for a regulatory regime that could promote a culture of safety & reliability. Yet the accessibility of applied knowledge, concepts and tools remains difficult.

To inculcate safety culture into operational and regulatory regimes, regulators need to diversify the collective skills and knowledge of regulatory staff and management, and develop regulatory models that encourage organizational and management behaviors that shape such cultures.

A framework is needed to guide these changes in a systematic manner; and leadership guidance is needed to enable tailored implementation. The body of applied knowledge supplemented by existing research is quite sufficient for a benchmarking study to produce a framework and guidance for regulators. Development of such a framework should also examine methods for training, education and models of regulatory collaboration. The study scope should include considerations for how to cost effectively implement these regulatory innovations, such as establishing an interagency center or institute for high reliability science and operations that could serve the needs of multiple regulators for developing leaders, supporting change and conducting focused analyses.

To conclude, I offer my own small contribution, what I call a strategic approach for seeking reliability, and a wise admonition from one of history's most innovative thinkers:

Strategic Approach for Seeking Reliability in Complex Sociotechnical Systems

$$\frac{(Re/Md)\ (\Delta W/Br)}{OILs} \rightarrow ØE$$

- Re – increase mindfulness to notice & mitigate risk
- Md – maximizing defense effectiveness
- ΔW – work as imagined vs. work as done
- Br – bolstering resilience
- OILs - Observations, Insights & Lessons
- ØE – no consequential events

the future

Leonardo da Vinci

"Oh investigator, do not flatter yourself that you know the things nature performs for herself, but rejoice in knowing the purpose of those things designed by your own mind."