



What does it mean to be a HERO?

By Sara Patrick, VP Enforcement and Regulatory Affairs

Over the past few years, you have likely heard about or read something from MRO promoting High Reliability Organization (HRO) theory. In our Region, we want all registered entities to be Highly Effective Reliability Organizations or “HEROs.” We promote HRO theory as a framework for ensuring reliable operations of the bulk power system. Implementing high standards of operational excellence supports our mission to “Maintain and improve the quality of life through a highly reliable regional Bulk Power System.” But, you may be asking, what does that mean for my organization? And how will MRO determine if an organization is a HERO?

There is a rich literature in organizational theory on HROs which originated in studies of aircraft carriers, firefighters, nuclear power operations, and other contexts where unexpected events may have life and death consequences. One of the hallmarks of HROs is that they have strong responses to weak signals. Author Daniel Goleman illustrates this point in his book *Focus: The Hidden Driver of Excellence*, which is reviewed in the *MRO Reads* section of this publication. Goleman tells the story of Nobel prizewinning astronomers Arno Penzias and Robert Wilson. Overwhelmed with data being gathered from powerful new equipment, they initially ignored some static assuming it was the result of faulty equipment and unimportant. After a chance encounter with a nuclear physicist, they realized the static was actually the weak signal from the reverberations of the big bang.¹ This notion of the importance of weak signals is one of the main ideas that Karl Weick and Kathleen Sutcliffe have articulated in their research on HROs and in their book, *Managing the Unexpected*.²

An HRO is an organization that has succeeded in avoiding catastrophes in an environment where operational challenges can be expected due to risk factors and complexity. According to Weick and Sutcliffe, HROs manage the unexpected through five principles: (1) preoccupation with failures rather than successes, (2) reluctance to simplify interpretation, (3) sensitivity to operations, (4) commitment to resilience, and (5) deference to expertise, as exhibited by encouragement of a fluid decision-making system.

Organizations that follow these five principles produce a collective state of mindfulness. To be mindful is to have a rich awareness and a discriminatory sense of detail, which enhances the ability to discover and correct errors before the errors compound and escalate into a crisis. That’s why MRO is always talking about keeping the small stuff small. These five principles are fundamental and are the basis of improvements in quality, reliability, productivity, and resiliency in any organization. By developing mindfulness, HROs demonstrate the capacity to anticipate and to contain unexpected problems.

In considering whether a registered entity is a HERO, MRO considers a registered entity’s demonstrated effectiveness at identifying noncompliance, assessing the risk posed by noncompliance, and mitigating noncompliance using the five HRO principles.

1. Preoccupation with Failure

Published in: May/June, 2015 Issue of *Midwest Reliability Matters*

Page | 1



To be preoccupied with failures rather than successes means that HROs encourage reporting errors, they sweat the small stuff, and they use a robust feedback system. They treat even small mistakes and misoperations as potential symptoms that something is wrong with the system, something that could have severe consequences if several separate small errors coincide. They also make a continuing effort to articulate mistakes they don't want to make; they have a preoccupation with failure.

Here are some typical questions MRO considers related to a registered entity's preoccupation with failure:

- a) Has the registered entity demonstrated that it has effective processes in place for identifying possible noncompliance with Reliability Standards?
- b) How is possible noncompliance communicated across the organization?
- c) Are employees rewarded for spotting problems, mistakes or errors? Are there any corporate incentives tied to identification, reporting and/or remediation of compliance and risk concerns?

2. Reluctance to Simplify Interpretation

To be reluctant to simplify interpretation means that HROs take deliberate steps to create a complete picture. They encourage varied experiences and differences of opinion without destroying nuances that diverse people detect. HROs understand that a simple answer to a complex problem may indicate a less than full understanding of the problem.

When they "recognize" an event as something they have experienced before and understood, that recognition is a source of concern rather than comfort. The concern is that superficial similarities between the present and the past mask deeper differences that could prove significant.

Here are some typical questions MRO considers related to a registered entity's reluctance to simplify interpretation:

- a) Based upon past performance, how thoroughly does the registered entity investigate the facts surrounding an identified possible noncompliance?
- b) How accurately has the registered entity assessed the risk to reliability posed by noncompliance?
- c) Has the registered entity demonstrated that it has processes in place to trend-spot possible noncompliance with similar causes?

3. Sensitivity to Operations

To be sensitive to operations means that HROs want to know how things work, not just how they are supposed to work. They treat deficiencies in normal operations as "free lessons" that signal the development of unexpected events.

HROs are attentive to the front line where the real work gets done. People who refuse to speak up out of



fear undermine the system, resulting in less knowledge than is needed for the system to work effectively. It makes no difference why the information is withheld—whether it is for reasons such as fear, ignorance, or indifference, the result is the same.

Here are some typical questions MRO considers related to a registered entity’s sensitivity to operations:

- a) Has the registered entity effectively identified the cause(s)/root cause(s) of past noncompliance?
- b) How does the registered entity’s assessment of risk to reliability impact its response to the noncompliance?
- c) In the past, has the registered entity provided timely and thorough communications to both the employees responsible for mitigation and to MRO?

4. Commitment to Resilience

A commitment to resilience means that HROs develop capabilities to detect, contain and recover from those inevitable errors that are part of an indeterminate world. HROs develop behaviors that allow individuals and their organizations to be resilient. HROs approach unplanned events in terms of mitigation and rapid recovery.

The hallmark of an HRO is not that it is error-free, but that errors don’t disable it. Resilience is a combination of keeping errors small and of improvising workarounds that allow the system to keep functioning. Both these pathways to resilience demand deep knowledge of the technology, the system, one’s coworkers, and most of all, oneself.

Here are some typical questions MRO considers related to a registered entity’s commitment to resilience:

- a) How has the registered entity demonstrated that it has effective processes in place for addressing/mitigating identified causes of noncompliance (both cause of discrete noncompliance and prevention of recurrence)?
- b) Does the registered entity assess the effectiveness of its mitigation activities?
- c) Does the registered entity continually direct resources to training and retraining employees on the technical systems, as well as on compliance obligations?

5. Deference to Expertise

HROs make decisions based on the technical truth and rely on the people with the most expertise. They understand that decisions that defer to technical expertise are likely to be more timely and correct.

Decisions made on the front line migrate to the people with the most expertise, regardless of their rank. Here are some typical questions MRO considers related to a registered entity’s deference to expertise:

- a) Has the registered entity designated “owners” of noncompliance identification/risk



assessment/mitigation? How is ownership defined/monitored/communicated?

- b) If something unexpected occurs (noncompliance), are decisions made by the most highly qualified employees, regardless of rank? How is this authority communicated internally and has the registered entity demonstrated this deference in the past?

Through the application of HRO principles, HEROs exemplify a collective state of mindfulness. This mindfulness allows for continually tracking small failures, resisting oversimplification, remaining sensitive to operations, maintaining capabilities for resilience, and taking advantage of shifting locations of expertise.

By giving careful consideration to the HRO principles and their application within an organization, MRO seeks to ensure all of our registered entities are HEROs.