Causal Factors Analysis to Investigate Information-Rich Events Before Accidents Occur

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Abstract

Pantex, because of its high consequence missions, must learn from low consequence, yet organizationally “information-rich” events to preclude a high consequence accident. Key to this organizational learning is an initiative to implement a new Causal Factor Analysis (CFA) process. Pantex’s new CFA process combines Human Performance Improvement with the investigative style of causal factors analysis to provide an indication of the health of the safety culture and the effectiveness of the High Reliability Operations. The Pantex CFA process is based on the premise that the same organizational weaknesses that could result in significant events are also present in non-consequential events. By properly investigating and analyzing “information-rich” events, Pantex can better understand and correct Latent Organizational Weaknesses that could lead to high-consequence events.

To date, Pantex has investigated eight events ranging from workers contacting live electrical circuits, missing hydrostatic testing on pressurized cylinders, to violating safety system requirements established to ensure critical safety. In each investigation we learn more about the organization and continue to improve the CFA investigative process. Below are some of the positive results of the B&W CFA process:

- Creates a positive atmosphere where workers feel less afraid to report errors – strengthens culture of safe performance
- Helps to unravel and understand deeper organizational issues and remove operational roadblocks
- Helps develop a stronger understanding of High Reliability Operations
- Facilitates joint union, contractor, and customer investigations into low consequence, yet organizationally rich events
- New investigative process and results are favorably received by regulatory bodies
- The numbers of requests for the CFA process is increasing
- Process is designed to support the Department of Energy accident investigation process
- CFA is applicable to any High Risk/Consequence organization, its uses goes well beyond Pantex and the Department of Energy

The Pantex CFA process is available free for others to determine the value of improving event investigations at their sites.