Lessons Learned from the Systematic and Practical Deployment of HRO Concepts in the Department of Energy

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Abstract

Pantex Plant (Pantex) operations are comprised of approximately 3200 workers who are required, on a daily basis, to successfully and safely complete its high hazard mission consisting of explosives manufacturing and nuclear explosives assembly to support the U.S. Nuclear Deterrent. Pantex has no option except to be a High Reliability Organization (HRO).

Although Pantex has been operating under a very formal and regimented conduct of operations for many years, they committed to transform to an HRO beginning in 2007. Pantex represents the first Department of Energy (DOE) site to systematically begin an HRO transformation. Four years into that journey, much has been accomplished, much has been learned, and much more is planned to continue the journey into the future. What has been learned is not found in text books as no other organization, with comparable size and hazardous mission has systematically attempted to apply the constructs of high reliability on such a mass scale and to document the progress and challenges along the way. The Pantex HRO journey has led to a deeper understanding that operating as an HRO means becoming a master of systems; understand their interactions, and learn the elements that must be protected at all costs. All groups actively involved with the HRO journey are finding that the deployment of the theoretical concepts require a simple and practical approach in order to work within the constraints of their operations. As such, many of the organizations have developed unique approaches and have good, hands-on experience with things that work and things that do not work that will benefit other organizations interested in exploring HRO implementation for their organizations.