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Before the

Defense Nuclear Facilities Safety Board

Regarding

Contractor Assurance System at Pantex Plant

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The Contractor Assurance System at BWXT Pantex

Introduction

Thank you for the opportunity to speak today regarding the Contractor Assurance System at BWXT Pantex. I am Mike Mallory, the President and General Manager of BWXT Pantex, the M&O contractor of the Pantex Plant for the Department of Energy's National Nuclear Security Administration.

BWXT Pantex is responsible for five core missions at Pantex. 1) We evaluate, retrofit and repair weapons in support of both life extension programs and certification of weapon safety and reliability. 2) We dismantle weapons that are surplus to the strategic stockpile and 3) sanitize the components from those dismantled weapons. 4) We continue to develop, test and fabricate high explosive components. 5) We are responsible for providing interim storage and surveillance of plutonium pits.

In the time I have today, I want to discuss BWXT Pantex's approach to Contractor Assurance. I am very positive about the Contractor Assurance initiative as it applies to BWXT Pantex, and I believe it will allow us to improve at a faster pace as a company and as an M&O contractor.

BWXT Pantex's Philosophy Prior to Contractor Assurance System

BWXT Pantex assumed the operation of the Pantex facility in 2001. Prior to that time, as we developed our proposal, we expended significant effort deciding how the Pantex Plant should be operated to improve safety and quality. From those discussions, we developed a philosophy of quality and self-assessment that mirrors, in many ways, the NNSA's current approach to Contractor Assurance.

We began by creating a Quality organization at Pantex. For several years prior to our arrival, quality functions had been disbursed through several organizations. By implementing a strong Quality organization and placing an experienced manager at the helm, we were quickly able to re-establish a focus on product quality utilizing objective data and measurement. For example, BWXT Pantex instituted holdpoint inspections to verify objectively the quality of manufactured products and the associated data. We instituted a new root cause analysis process in FY01, and we further strengthened it this year. Our Quality efforts have resulted in an 86% reduction in procedural adherence occurrences from FY01 to FY03.

Another proposal initiative involved the creation of Nuclear Safety Officers in the Manufacturing Division to enhance ongoing assessments of nuclear facilities and operations. These individuals were drawn from our most experienced facility managers.

We also implemented several initiatives to improve self-assessments. We developed an Executive Issues Review Board where senior managers meet monthly to discuss and evaluate performance issues and significant performance data trends. We implemented a Business Health Indicator process that measures performance in a variety of areas and links it to successful achievement of improvement initiatives. We strengthened the self-assessment process by increasing the quality and quantity of management self-assessments and independent

assessments. We have also improved the critique process and the Issues Management function. From the first day of our contract, our approach has been to proactively look for issues and resolve them before they become problems.

BWXT Pantex's Current Approach to Contractor Assurance

Now that I've talked a little about the past, I'd like to turn to our current activities.

We see Contractor Assurance as a facility-wide initiative that is our primary tool for demonstrating to ourselves that plant operations are safe, secure, efficient, and of the highest quality. Contractor Assurance activities cut across every business function in the company.

From an overall standpoint, Contractor Assurance activities occur in three major steps. The first step is Collection of data, in which we gather assurance information through divisional assessments, metrics, independent audits and assessments, and management reports. The second step is Evaluation and Improvement, which utilizes a centrally-focused Issues Management system to analyze performance data gathered by assessments. Improvement actions are taken accordingly and analyzed for effectiveness. The third step is Communication, which ensures that assurance information is provided to BWXT Pantex senior management, the Pantex Site Office, and most importantly, the people doing the work.

The Quality and Performance Assurance Division is responsible for the day-to-day management of the BWXT Pantex Contractor Assurance System. The division manager reports directly to me in all matters concerning contractor assurance and quality. Functional elements within the division include Issues Management, Lessons Learned, Occurrence Reporting, the Price-Anderson Accountability Program, Independent Assessment, Readiness Assessment, and Compliance Assurance and Product Acceptance. Additional information is provided through the independent Internal Audit function, which also reports directly to me.

Operation of the BWXT Pantex Contractor Assurance System consists of several major components. We have a clear, documented description of activities. Managers understand the description of their responsibilities, and a clear plan of key activities has been developed. The Quality and Performance Assurance Division validates each functional manager's annual assessment plan to assure the highest risk processes are included. Functional organizations provide assurance information in the form of assessment reports and metrics. Assessment completion is compared to established plans to ensure accountability. Assessment reports are reviewed for breadth, depth and consistency, and feedback is provided to the functional organizations. The Quality and Performance Assurance Division also provides feedback to our functional managers through Lessons Learned, the Executive Issues Review Board and direct communication. Assessment and event information is collected and evaluated for trending; this includes internal, independent, and external assessment data. Assurance information is provided to the Pantex Site Office in a variety of ways, including reports, charts, presentations, and letters. Finally, we will annually revise the Contractor Assurance plan and coordinate any changes with the Site Office. One more major component that deserves mention is the risk management model. BWXT Pantex operations are categorized within business functions, such as Manufacturing, Finance or Environment, Safety & Health. Each of the managers responsible for these business functions has determined the highest priority, risk-based performance areas for

their organization. Each BWXT Pantex senior manager has obtained the agreement of his or her Site Office counterpart regarding the selection of the most important, risk-based performance areas that are to be evaluated during the year. BWXT Pantex considered risk in association with two fundamental dimensions: the *consequences* of a failure and the *probability* of a failure, considering the controls already in place, and the historic performance in the area. Performance areas that cross functional lines, such as occupational injuries, radiation exposure, absenteeism or occurrence reports, are evaluated by a lead organization. For example, our Employee Concerns organization leads the evaluation of plant absenteeism.

Line of Inquiry #1

Our assessment activities are conducted independently and by the management of our functional organizations. Independent assessments and audits are performed by organizations separate from the process being examined, and management assessments are conducted by the organizations responsible for the process.

The Independent Audit Group performs audits primarily driven by the DOE Office of Inspector General's Audit Manual. This guidance is incorporated into our own plant standard, which we call Standard 0270, titled "Internal Audits." The Independent Assessment Group performs assessments driven by 10CFR830.122 Subpart A, 10CFR835.102, DOE Order 414.1, and QC-1. In addition, other groups such as Product Quality, Explosives Safety, Nuclear Explosive Safety, and Security conduct independent assessments of activities in their areas of expertise. The independent assessment program is covered by Plant Standard 0107, titled "Independent Assessments and Management Assessments."

The management assessment program, also driven primarily by 10CFR830.122 Subpart A and DOE Order 414.1, is incorporated into Plant Standard 0107. Each of 22 functional area managers is responsible for developing an annual assessment plan to evaluate his or her own processes through regular assessments. These assessments provide the managers with valuable information with respect to the processes for which they are responsible. The information provided by management assessments is a key element of the Contractor Assurance System process.

The subjects and frequency of all these assessments are determined through a risk model that takes into account a number of factors. For example, we look at external drivers such as 10CFR835.102 that require all areas of the Radiological Controls Program to be assessed every 36 months. We also consider occurrence reports and the time that has passed since the last assessment in a particular area. A broad spectrum of functional areas is assessed, including nuclear safety, explosives safety, industrial safety, radiological controls, environmental compliance, quality, and security. All of the independent audits and assessments are requirements-driven and evaluate performance against established criteria. Over 100 independent audits and assessments are performed every year. Copies of all internal audit and independent assessment reports, along with all the results from the management self-assessments, are provided to Issues Management for tracking, trending, and Price-Anderson Act Screening. The independent audit and assessment reports are provided to the Pantex Site Office as another key element of our assurance information.

Line of Inquiry #2

Audit and assessment teams and leaders are trained and qualified and perform assessments using criteria review and approach documents that ensure assessment scope and purpose are met. The results of independent audits and assessments have been shared with the Site Office for more than six years.

BWXT Pantex is strengthening the existing management self-assessment process. Personnel performing management self-assessments will receive training from the Independent Assessment group on the proper method of planning and performing assessments. This action is to be completed by December 31, 2003. Additionally, representatives of the Independent Assessment Department will conduct an evaluation of completed management self-assessments. This will include an evaluation of the effectiveness and documentation of the assessment as compared to the scope and area. This action is ongoing and is a key component of the BWXT Pantex Contractor Assurance System.

A more formal risk model is being developed to ensure that the right functional areas and correct topics are being assessed. This risk model will be based upon probability and consequence so that BWXT Pantex can ensure those areas with the greatest risk will be assessed. This risk model is scheduled to be complete by March 31, 2004.

Improvements are also being made to the BWXT Pantex critique process. The plant standard for critiques has been revised and issued, and the lessons plan for critique director training has been revised and approved. The training of all critique directors will be completed by December 31, 2003.

Another key component of the Contractor Assurance System is assuring that the lessons learned from our strengths, as well as weaknesses, are properly fed back to appropriate plant personnel. As a result, the plant lessons learned program is being revised and improved. These changes will be completed by July 2004, and they will include full integration of the lessons learned process with a new corrective action system.

A variety of metrics are being used to ensure BWXT Pantex is focusing on the right issues. From a quality standpoint, we monitor metrics on occurrence reports, procedure adherence, the ratio of assessment driven issues to event driven issues, corrective action cycle time, assessment schedule performance, Contractor Assurance implementation milestones, implementation of Software Quality Assurance plans, product defect rates, and material control. In the area of Safety & Emergency Management, we review metrics on total recordable case rate, the lost time rate, radiation exposure, chemical inventories, and Emergency Response Organization training.

Metrics in the other functional areas, including production, personnel, infrastructure, security, finance, and Capital and Expense Projects, are also included in the plan.

These metrics are discussed monthly by BWXT Pantex management at our Business Health Indicator meeting.

Line of Inquiry #3

Both the Internal Audit Group and the Independent Assessment Group have a training and qualification program for their personnel. These groups are fully staffed and qualified. Personnel that conduct tracking and trending, Price-Anderson Act screening, and monitor the quality of critiques and causal analysis performance are trained on their respective disciplines. Since BWXT Pantex took the initiative early on to bolster the plant's assessment capabilities, these activities are appropriately staffed. However, as the system matures, we will monitor the workload to determine whether additional staffing is required. In addition, the quality of the management self-assessment program is being strengthened by having our Independent Assessment Group provide an assessment guide, training, and feedback to the functional area managers and their personnel on the conduct of assessments.

Line of Inquiry #4

Over the past year BWXT Pantex has made a concentrated effort to improve all aspects of our issues management program. A detailed evaluation of the program was conducted in October and November of 2002, and a root cause analysis was performed to determine the causes of the weaknesses identified. A robust corrective action plan was implemented and executed to improve the issues management and corrective action processes. The weaknesses, analyses, and corrective action plan have been discussed in detail with the Site Office, Pantex's DNFSB site representative, and the Office of Price-Anderson enforcement, EH-6.

The current corrective action process is outlined in Plant Standard 6161, titled "Issues Management." It requires all identified deficiencies be entered into the plant's Action Management System by use of a standard form. This form is reviewed by the appropriate division coordinator, approved by the appropriate manager, and transmitted to the Performance Assurance Department for Nuclear Safety Rule screening as required by the Price-Anderson Amendments Act. This process is fully integrated with the assessment process in that all assessments (including independent assessments, internal audits, management self-assessments, and external assessments) are required by internal procedure to have the standard form completed on each finding or grouping of similar findings. Root cause analysis is required to be performed within 15 days. Subsequent determination of corrective actions, based upon the identified causes, is required within seven days following completion of the causal analysis. The actions are then completed, and objective evidence of completion is required prior to an action being closed in the system. The documentation of findings, causal analyses, and objective evidence of corrective actions are scanned into the plant's action management system for a complete electronic record.

In October 2001, the root cause analysis process in place at Pantex was determined to be inadequate and in need of improvement. BWXT Pantex asked that representatives of the Kansas City Plant conduct a third party evaluation of the root cause process at Pantex. KCP's evaluation identified weaknesses, including inconsistent and improperly performed analyses, failure to use the plant's causal analysis tools, and a lack of training of personnel performing root cause analyses. As a result, BWXT Pantex benchmarked the KCP process and later implemented it at Pantex. The process is called CA/MP, which stands for Corrective Action/Mistake Proofing. Since November 2001, more than 1700 personnel have received training in the CA/MP process.

While improvements have been made, we continue to strive for more consistent and effective performance of root cause analyses. I meet monthly with my management team to discuss in detail the occurrence reports and Price-Anderson noncompliances of the previous month at the Executive Issues Review Board. The responsible division manager presents facts surrounding events and the results of the causal analysis. The Executive Issues Review Board and associated discussions have resulted in further improvements in our causal analysis.

To improve our ability to track and trend corrective action data, BWXT Pantex has purchased a new action tracking and performance trending system that will substantially improve the efficiency and effectiveness of our action tracking and documentation, but more importantly will substantially improve our ability to perform trend analysis and create performance indicators. The Office of Price-Anderson Enforcement recommended this particular system, which is already in use at Hanford. My Performance Assurance Department benchmarked a number of systems and concluded this was the best fit for our processes. My senior staff and I have observed a demonstration of the system, and we are committed to have it on line and operational by July 31, 2004.

Benefits of Contractor Assurance for BWXT Pantex

As a contractor, I see the Contractor Assurance System initiative as an improvement in communication between the contractor and the NNSA. The process begins with the development of the annual plan, when the Site Office and BWXT Pantex meet to outline the approach for the coming year. Communication continues as the two parties reach agreement on activities to be assessed during the year and the level of risk these activities pose for the site. In addition, agreement is reached in each functional area on the frequency and form of assurance information that is to be provided to the Site Office. In every step of the Contractor Assurance process, from reviews of audit results to discussions about data trends, BWXT Pantex managers and their Site Office counterparts will communicate regularly.

I personally believe that self-assessment promotes better performance and is the reason our original proposal emphasized this concept. Contractor Assurance will drive BWXT Pantex to proactively plan assessments, measure corrective action effectiveness, and communicate the results internally and externally. One area where this is clearly illustrated is in our Business Health Indicator program. Performance is assessed at the operating level using business-wide metrics. As these metrics are rolled up, we see how they affect our strategic improvement initiatives. Employees throughout the organization can see how their personal performance impacts the entire plant's performance.

An additional benefit of BWXT Pantex's Contractor Assurance approach is its strong Issues Management focus. The Issues Management system leads directly to improving day-to-day operations. It is a multifaceted set of tools and processes that implement the feedback and improvement function. The Issues Management system formally integrates all phases of problem or deficiency resolution including identification, evaluation, reporting, lessons learned, tracking, performance data trending, and closure. BWXT Pantex's formal Issues Management Business Policy encourages personnel at all levels of the company to report issues to the Issues Management process to be analyzed and corrected. A robust critique process quickly and accurately determines the facts, the timeline and immediate actions taken or to be taken for the

respective event. Weekly status reports are provided to all senior managers, and issues are closed upon receipt of objective evidence that the specified actions have been completed.

One more significant benefit to BWXT Pantex is the fact that Contractor Assurance System lends itself to validation of data. Through independent assessments, audits, review of metric data and trending information, our Quality and Performance Assurance Division can validate the accuracy and adequacy of the information received from the functional organizations. Evaluation of event-driven information against assessment results and metric data provides an indicator of where detection and prevention weaknesses may exist. Performance is also validated through external assessments performed by DOE or NNSA. We will also seek peer reviews of selected processes by companies performing similar activities at other Nuclear Weapon Complex sites.

Conclusion

In conclusion, I want to convey to the Board that BWXT Pantex understands that safety, quality and security comprise the foundation upon which this nation's nuclear deterrent has been developed and maintained. Without a dependable stockpile, our national security is at risk. It is in this context that BWXT Pantex is implementing Contractor Assurance. The Contractor Assurance System mirrors our corporate values of accountability, responsibility, and continuous improvement.

Thank you for the opportunity to testify before you today. I welcome any questions you have about BWXT Pantex's approach to Contractor Assurance.