



Paducah Gaseous Diffusion Plant

**INDEPENDENT SAFETY CONSCIOUS WORK ENVIRONMENT
ASSESSMENT RESULTS – PRESENTATION TO NRC**

March 6, 2013

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BACKGROUND

- **2009 - Confirmatory Order EA-06-140**
 - Section V. I. – required a third party to conduct an independent assessment of SCWE at USEC’s Paducah site.
 - Section V.III – Required follow-up SCWE assessment within 3 years
- **2011 - Confirmatory Order EA-11-056, Section V. d.**
 - Section V. d. - Expand follow-up SCWE assessment from EA-06-140 to include safety culture components of decisions making and work practices. Focus on effectiveness of corrective actions since March 17, 2010 contamination event.
 - Section V. e. – Brief NRC on the results of the assessment and provide NRC results of its efforts to identify appropriate metrics to measure site Safety Culture.
- **Assessment Conducted October 8-19, 2012**

SCWE ASSESSMENT SCOPE

- **Evaluation Team**
 - Six individuals independent of USEC. Each with industry and/or regulatory experience.
- **Assessment Scope**
 - Review the effectiveness of corrective actions taken as a result of the 2009 initial SCWE assessment
 - Determine overall effectiveness of the SCWE
 - Include assessment of Safety Culture elements of Decision Making and Work Practices
 - Include direct observation of facility staff in use of error prevention methods and procedure adherence
 - Include benchmarking of other industry facilities in the area of error prevention

SCWE ASSESSMENT SCOPE

- **Methodology**
 - Review of Programs, Procedures, Policies and Training
 - Review of Metrics, Assessments, and Inspections
 - Review of corrective actions taken since 2009
 - Observations of selected site meetings and work activities
 - Interviews with Management and Supervision, Working-Level/Frontline Personnel, Bargaining Unit representatives
 - Review of selected plant events and Management's response.
- **Provide Conclusions/Recommendations**

SCWE ASSESSMENT CONCLUSIONS

- **SCWE Program:**
 - Personnel are overwhelmingly willing to raise safety concerns without fear of retaliation
 - Corrective Action Program (CAP) has continued to ensure that identified safety problems are evaluated and corrected in a timely manner
 - PGDP personnel exhibited knowledge of various alternate avenues available for raising issues and concerns
 - There continues to be strong awareness that retaliation for raising safety concerns is prohibited
 - Corrective actions since 2009 assessment have been effective with no areas of decline identified
 - Corrective actions since 2010 contamination event have been effective and significant improvements were recognized

SCWE ASSESSMENT CONCLUSIONS

- **Safety Culture Element of Decision Making :**
 - PGDP has strong expectations for stopping work in the face of uncertainty and it is effectively communicated
 - Overwhelming positive response from Focus Groups that production schedule is not prioritized over safety
 - There is a strong recognition from site personnel that equipment safety issues are properly prioritized and resolved
 - Personnel overwhelmingly reported a questioning attitude is valued within their immediate work group and by senior management
 - There is a strong willingness to ensure that appropriate precautions and preparations are completed prior to proceeding with scheduled work
 - A questioning attitude is valued both within the work group and within management
 - Criticality controls are a major focus of plant personnel during pre-job briefs and when discussing ATRs.
 - There appears to be recognition and support for conservative decision making at PGDP

SCWE ASSESSMENT CONCLUSIONS

- **Safety Culture Element of Work Practices:**
 - USEC has taken steps to reinforce appropriate work practices including training, setting standards and expectations, and accountability
 - Human performance training modules have been developed and training provided to entire population
 - Management message has been consistent and constant regarding reinforced expectations for procedure compliance
 - Procedure compliance training has been provided
 - Management has implemented a practice of expected and effective constructive discipline regarding procedure violations
 - USEC's efforts to reinforce work practices are appropriate but there is room for improvement in the areas of procedure compliance, delivery and effectiveness of training, management observations, and general housekeeping

SAFETY CULTURE METRICS

- USEC Consulted numerous sources including industry groups and other utilities (INPO, IAEA, NEI, DNFSB, FPL, Exelon, APS, TVA)
- Wide variance in metrics in the field is highly dependent on site specifics.
- USEC concluded PGDP is consistent with other facilities and utilizes the following metrics as indicators of the health of the safety culture:

REGULATORY ISSUES

- Rate and nature of violations and reportable events
- Significant events/human errors
- Safety system actuations/failures
- Number of open SCAQ/CAQ corrective actions
- Age/number of overdue corrective actions
- Identification of repetitive problems
- Number of procedure periodic reviews past due
- Number of audit findings

EMPLOYEE ISSUES

- Radiation exposures
- Turnover rate
- Excessive use of overtime
- Quality of training (deficiencies, test results, deferred/overdue)
- Number & nature of employee concerns/NRC allegations
- SCWE survey results
- Lost time accidents/RII
- Absenteeism rate

PLANT CONDITIONS

- Corrective/preventive maintenance backlog
- Schedule adherence
- Equipment outages
- Overall system health
- Unplanned outages
- Work document and procedure errors
- Housekeeping
- On time shipments
- Cells on stream/PUI

OVERALL CONCLUSIONS/RECOMMENDATIONS

- There were a number of areas of improvement, and no areas of decline, since the 2009 ISA
- PGDP personnel overwhelmingly expressed their willingness to raise safety, quality, and compliance concerns without fear of retaliation.
- PGDP Senior Leadership members are viewed as SCWE leaders and open lines of communication exist between working-level personnel and front-line managers.
- Accountability for meeting standards and expectations has improved and is recognized by both management and workforce.
- Recommendations based on industry best practices were submitted by the team for USEC's consideration in the following areas:
 - Increase rigor and improve SCWE strategy, training, and communications
 - Continue planned improvements in the Corrective Actions Program and Employee Concerns Program
 - Enhance measurement and monitoring of SCWE effectiveness
 - Continue efforts in improving the Human Performance Program and Procedure Use and Adherence
- Continue monitoring current Safety Culture metrics.