



**Robert Van Namen**  
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September 28, 2010  
GDP 10-0038

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Mr. Victor M. McCree  
Deputy Regional Administrator for Operations  
Office of the Regional Administrator, Region II  
U. S. Nuclear Regulatory Commission  
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245 Peachtree Center Avenue, Suite 1200  
Atlanta, Georgia 30303-1257

**Paducah Gaseous diffusion Plant (PGDP)**  
**Docket Number 70-7001, Certificate No. GDP-1**  
**Summary of Actions Taken in Response to NRC Order EA-08-344**

Dear Mr. McCree:

The Nuclear Regulatory Commission's (NRC) letter of August 18, 2009 (See Reference), issued Confirmatory Order EA-08-344 to the United States Enrichment Corporation (USEC). The Confirmatory Order was a result of a successful alternative dispute resolution (ADR) session. Section V of the Confirmatory Order requires USEC to provide the NRC with a letter discussing its basis for concluding that the Confirmatory Order has been satisfied. Enclosure 1 of this letter provides the required basis and a summary of actions taken.

If you have any questions regarding this review, please contact Steve Toelle (301) 564-3250. There are no new commitments contained in this submittal.

Sincerely,

Robert Van Namen

Reference: Letter from Victor M. McCree (NRC) to Robert Van Namen (USEC),  
Confirmatory Order (EA-08-344), dated August 18, 2009.

Enclosure: Summary of Actions Taken in Response to NRC Order EA-08-344

cc: J. Henson, NRC Region II Office  
T. Liu, NRC Project Manager – HQ  
M. Miller, NRC Sr. Resident Inspector - PGDP

**Summary of Actions Taken in  
Response to NRC Order EA-08-344**

**I. INTRODUCTION**

The Nuclear Regulatory Commission's letter of August 18, 2009, issued Confirmatory Order EA-08-344 to USEC. Section V of the Order requires USEC to meet five requirements as corrective actions for an incident that occurred in late January 2008, involving an operator that was preparing a UF<sub>6</sub> cylinder for movement using the applicable procedure. The operator mistakenly failed to follow a procedural step while moving the cylinder, which resulted in damage to the pigtail and to the autoclave manifold connection. Although the cylinder was safely secured, the operator, together with a second operator who was involved in unrelated activities nearby, and a trainee, willfully took actions to conceal the incident, including the falsification of records and failure to disclose details of the incident to USEC management. Section V of the Confirmatory Order requires USEC to provide the NRC with a letter discussing its basis for concluding that the Confirmatory Order has been satisfied. The five actions are listed below, followed by USEC's basis for considering them complete.

The incident investigation report for this issue identified two basic root causes, 1) unintentional failure to follow procedure, and 2) lapse of personal integrity. A corrective action plan was developed to address each root cause, prevent recurrence, and to perform mid-point and end-point effectiveness reviews. The mid-point effectiveness review for root cause #1 was completed in July prior to issuance of the Confirmatory Order. Action #1 as stated below, was to complete the end-point effectiveness review for the root cause #1. Both the mid-point and end-point effectiveness reviews for root cause #2 are addressed in Actions 2 and 3 below.

- 1. USEC agrees to conduct an end-point effectiveness review of actions targeting improvement in procedural compliance. USEC will review plant data for instances of failing to comply with applicable sections of CP2-PS-PS1044, "Use of Procedures."**

Actions Taken by USEC

An end-point effectiveness review of actions taken to address root cause #1 identified in the incident investigation was completed in accordance with the Corrective Action Program (CAP). A review of the CAP database from December 19, 2008 through December 19, 2009, indicated there were no instances of failure to comply with placekeeping requirements of CP2-PS-PS1044, "Use of Procedures." The corrective actions were therefore concluded to be effective. This action is complete.

2. **USEC agrees to conduct a mid-point effectiveness review of its efforts to enforce compliance with the USEC Code of Conduct. USEC will review plant data for instances of intentional procedure or USEC Code of Conduct violations. The acceptable success criterion is zero instances of intentional procedure or USEC Code of Conduct violations.**

Actions Taken by USEC

A review of the Corrective Action Program database was conducted for the period of April 30, 2008 to July 17, 2009. No instances of confirmed intentional procedure or USEC Code of Conduct violations were identified during this period.

It should be noted that a series of all-hands meetings was conducted in March 2009 where the General Manager and Plant Manager reinforced the message that line management is responsible to establish and enforce the proper safety culture, and to roll out a Nuclear Safety Culture briefing for all workers that highlights the safety implication of not reporting mistakes and the related guidance in the USEC Code of Conduct.

The mid-point effectiveness review concluded the actions taken were effective. This action is complete.

3. **USEC agrees to conduct an end-point effectiveness review of its efforts to enforce compliance with the USEC Code of Conduct. USEC will review plant data for instances of intentional procedure or USEC Code of Conduct violations. The acceptable success criterion is zero instances of intentional procedure or USEC Code of Conduct violations.**

Actions Taken by USEC

A review of the Corrective Action Program database was conducted for the period of July 17, 2009 to August 18, 2010. The results of the review corroborated, with the overall theme of information that has been presented during Daily Communications and Teamwork meetings over the past several months, as well as in general discussions with management personnel, that there is strong evidence that the willingness to self-identify problems and/or errors has significantly improved during the review period. Evidence of this willingness is seen in several ATRs (09-1963, 09-2060, 09-2174, 09-2385, 09-2391, 09-2524).

However, there were two ATRs during the review period that documented continuing concerns in this area (09-3085 and 10-0704). Both involve the violation of plant requirements and neither was self-reported. One involved a

first line manager who was in violation of plant requirements by having in his possession an unauthorized personal camera phone. As a result of this and other performance-related problems, the manager was ultimately terminated. The second ATR involved an operator who failed to survey out of a radiological area, which resulted in the spread of contamination. When questioned about the incident, the operator indicated she had appropriately surveyed out of the zone. Based on facts that were in direct conflict with her testimony, a decision to terminate was made. The operator resigned from the company prior to the "for cause" termination being administered.

The criteria for meeting the effectiveness goals associated with the "Lapse of Integrity" root cause were "no instances of intentional procedure or USEC Code of Conduct violations". The ATRs discussed above indicate that progress has been made in this area as a result of previous corrective actions, through the consistent application of positive discipline, and by a consistent message from management conveyed in various venues across the plant. However, a continued emphasis in this focus area appears to be warranted. A follow-up action has been established in the PGDP corrective action process to conduct senior management meetings with plant personnel to further reinforce expectations. An additional effectiveness review will be conducted following completion of the planned action.

While the end-point effectiveness review identified significant progress toward meeting management expectations additional actions are planned for the remainder of 2010 with a follow-up effectiveness review in mid-2011. Since these actions are being tracked in the Corrective Action Program process, this action is closed.

4. **Not later than 180 days after the issuance of the confirmatory order, USEC will conduct a review of the Assessment Tracking Reports classified as either "Significant Conditions Adverse to Quality" or "Level 1 events" during the 12 months preceding the issuance of the confirmatory order, in addition to this occurrence, to determine if weaknesses in any of the 13 safety culture components, as identified in NRC Regulatory Information Summary 2006-13, caused or significantly contributed to the event.**

Actions Taken by USEC:

On October 6, 2009, a team of six individuals from diverse groups at the Paducah Gaseous Diffusion Plant was established by the General Manager to perform the required assessments. The team received training from the law firm of Morgan, Lewis & Brockius, LLP, regarding the NRC's definition for Nuclear Safety Culture and the thirteen safety culture components and aspects

identified in RIS-2006-13. Within the thirteen safety culture components are thirty-seven aspects that better define the particular safety culture component.

Following the training, the team selected twenty-three events (SCAQ and Level 1) and proceeded through a structured review of each event. The review consisted of examining each event to determine if the facts revealed a weakness in any of the thirteen safety culture components that could have been a significant contributor to the event.

The methodology utilized in the analysis consisted of:

- Review of each SCAQ or Level 1 event and the related documents to ensure a comprehensive understanding of the facts and to ensure that the facts provided in the ATR closure packages contained sufficient information to determine if a weakness in any of the 13 safety culture components was a contributor to the event.
- Comparing facts of each event against the 37 aspects identified within the 13 safety culture components. In conducting this review, the team examined whether the facts revealed a weakness in one or more of the 37 aspects.
- Determining correlations between a specific situation/condition of the event and a safety culture aspect and whether or not the situation was a cause or significant contributor to the event.
- Based on the correlation between the event and the 37 aspects, the team reviewed the information to determine if weaknesses within the overall safety culture component either caused or significantly contributed to the event.
- A final report was then prepared.

The evaluation concluded an overall weakness existed in human performance and in particular the four components that make up the human performance area; namely work practices, resources, work control, and decision making. Corrective actions are discussed in item #5 below.

The final report, "Report of the Self-Assessment of SCAQs and Level 1 Events Against 13 Safety Culture Components", was issued on February 12, 2010. This action is complete.

- 5. Within 90 days after conducting the review described in paragraph V.d and following completion of the Safety Conscious Work Environment assessment, USEC will assess the safety culture component weaknesses identified above, integrate the results with the Safety Conscious Work Environment assessment, and develop any appropriate corrective actions.**

Actions Taken by USEC:

Subsequent to issuance of "Report of the Self-Assessment of SCAQs and Level 1 Events Against 13 Safety Culture Components", a management team consisting of the Plant Manager, the Regulatory Affairs Manager, and the Customer Service & Product Scheduling Manager performed the required management review, determined appropriate corrective actions, and integrated the results with the "Report of the Independent Safety Conscious Work Environment Assessment (ISA)." This management review was completed on May 7, 2010.

In addition to the specific actions taken on each SCAQ/ Level 1 event and the approximately thirty seven actions in the ISA action plan, an additional four actions were identified by the management review for future improvement and sustainability of the PGDP Safety Culture. Those actions have been incorporated into the appropriate corrective action program. This action is complete.