February 26, 2007

EA-07-323

Mr. Steven R. Penrod
General Manager
Paducah Gaseous Diffusion Plant
P.O. Box 1410
Paducah, KY 42002

SUBJECT: RESPONSE TO DISPUTED VIOLATIONS 70-7001/2006-203-01 AND -02 REGARDING THE FAILURE TO REPORT A LOSS OF DOUBLE CONTINGENCY TO THE NRC

Dear Mr. Penrod:

This letter refers to your correspondence dated December 4, 2006, in reply to our November 3, 2006, Inspection Report and Notice of Violations (NOV). The cited violations concerned the loss of double contingency in the C-310 scale pit and the failure to report the loss of double contingency to the NRC.

In your reply to Notice of Violations 70-7001/2006-203-01 and -02, you disagreed with the cited violations. In your response to violation 2006-203-01, you state that double contingency was maintained. In your response to violation 2006-203-02, you state that reportability is based on actual process condition violations and you assert that, due to the as-found conditions at the time of the event, double contingency was maintained and the scale pit event was not reportable. In addition, you state that violation 2006-203-02 is inconsistent with past NRC positions on nuclear criticality safety (NCS) reporting. You have included, as background for your denial of violation 2006-203-02, a reference to a past NRC inspection report (Inspection Report 70-7001/98-013) in which the NRC inspector reviewed your policy statement regarding what constitutes a violation of the double contingency principle and your assessments of several internal NCS events.

In consideration of the risk significance of the C-310 scale pit event, the NRC combined the failure of the scale pit alarm system with the failure of double contingency into one violation, 2006-203-01. The NRC has consistently taken the position that if one of the two process controls credited for double contingency fails resulting in exceeding the process limit, then double contingency has failed unless another credited control on an independent process condition can be cited to assure that two process condition changes would be needed to reach a condition where criticality was possible. The two process controls on the C-310 withdrawal operation were the integrity of fissile material vessels against escape of fissile material and the level of water in the scale pit remaining less than required for a critical configuration with authorized fissile material. The NRC concludes that the credited control on water level in the pit failed and the criticality safety limit was exceeded.

Your approved analysis for the C-310 scale pit assumes that water will occasionally enter the scale pit and approach the action limit of 2.5 inches of water in the pit. Your analysis concludes

that double contingency would be maintained due to a moisture indicator in the scale pit indicating that the 2.5 inch limit has been exceeded. This would allow operators to intervene well before the criticality safety limit of 3.68 inches is challenged, thus limiting the possibility that both controls will fail at the same time and maintaining double contingency. The NRC concludes that, due to the scale pit moisture indicator being inoperable, operator action during a water level upset could not be relied on as anticipated by the criticality analysis and, therefore, that double contingency had failed. Based on our review of the information you provided in your response, we have concluded that no new information was provided that would change our earlier determination that violation 70-7001/2006-203-01 occurred due to the failure of double contingency.

In your response to violation 2006-203-02, you asserted that the C-310 scale pit event was not reportable because double contingency was maintained. Your basis for asserting that double contingency was maintained is that the maximum assay in C-310 at the time of the event was 2.0 wt% which would have required a higher water level in the pit for criticality than the credited limit of 3.68 inches or than the level that was actually reached during the event. The NRC concludes that the criticality analysis assumed a normal condition assay limit for the facility of 5.5 wt% and therefore this hypothetical situation should be considered in determining the loss of a control.

In your response, you quoted NRC Inspection Report 70-7001/98-013 in which the inspector reviewed your assessment of NCS events. The discussion you cited from that inspection report included an example of double contingency based on exclusion of 5.5 gallons of fissile material with the observation that a 5.5 gallon container without fissile material would not violate double contingency. This example does not apply to this event because the empty 5.5 gallon container does not, in itself, conflict with the NCS control of bringing 5.5 gallons of fissile material into the area. The NRC concludes that the cited example also does not imply that as-found conditions may be used to revise credited criticality safety limits based on transient changes in process conditions but, instead, means that the process condition subject to NCS control must actually be affected by the upset before double contingency is violated.

Furthermore, your response to violation 2006-203-02 states that your policy requires NCS reporting when the double contingency principle is violated, i.e., when one of the two process conditions being controlled is violated. In addition, you state that it is not your policy to report administrative infractions of NCS controls when neither of two process conditions required to maintain double contingency are actually violated. The NRC concludes that one of the two process controls required to maintain double contingency in the C-310 scale pit, the limit on water level, was actually violated and that this condition was more than an administrative infraction. The NRC concludes that the C-310 scale pit event revealed a loss of double contingency and that no event report was made by USEC. Based on our review of the information you provided in your response, we have concluded that no new information was provided that would change our earlier determination that violation 70-7001/2006-203-02 occurred due to the failure to make a required event report.

Upon reconsideration based on information you provided and consultation with the Office of Enforcement, we have determined that the cited violations are valid and require corrective action to prevent recurrence. You must take the necessary corrective measures to resolve

these violations in accordance with applicable regulatory requirements. You are also required to respond to this letter within 30 days and should follow the instructions specified in our November 3, 2006, Inspection Report and Notice of Violations when preparing your response.

In particular, you should include the reason for the violation and the corrective actions you have taken to avoid future violations. After reviewing your response to the Notice, the NRC will determine whether further enforcement action is necessary to ensure compliance with the regulatory requirements.

These violations were evaluated in accordance with the NRC Enforcement Policy. The current Enforcement policy is included on the NRC's Web site at www.nrc.gov; Select **What We Do**, **Enforcement**, then **Enforcement Policy**.

In accordance with 10 CFR 76.70 of NRC's "Rules of Practice," a copy of this letter will be made publicly available in the public electronic reading room of the NRC's Agency-Wide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/ADAMS.html.

If you have any questions, please contact Natreon Jordan, of my staff, at (301) 415-7648.

Sincerely,

/RA/

Joseph G. Giitter, Deputy Director
Special Projects and Technical
Support Directorate
Division of Fuel Cycle Safety
and Safeguards, NMSS

Docket No. 70-7001
Certificate No. GDP-01

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/RA/

Joseph G. Giitter, Deputy Director
Special Projects and Technical
Support Directorate
Division of Fuel Cycle Safety
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Docket No. 70-7001
Certificate No. GDP-01

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