



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

August 6, 2008

EA-08-165  
NRC Event No. 43981

Mr. Cary Alstadt  
Manager, Columbia Plant  
Westinghouse Electric Company  
Commercial Nuclear Fuel Division  
Drawer R  
Columbia, SC 29250

**SUBJECT: NOTICE OF VIOLATION (NRC INSPECTION REPORT 70-1151/2008-005)**

Dear Mr. Alstadt:

This letter refers to a reactive inspection conducted on February 14-15, 2008, at the Columbia Fuel Fabrication facility. The purpose of the inspection was to review the circumstances surrounding the loss of two containers, each enclosing eight sample vials of uranium hexafluoride. The 16 sample vials of uranium hexafluoride were apparently disposed of prior to laboratory processing on February 4, 2008. The results of our review of this matter, including the identification of three apparent violations, were discussed with you on April 29, 2008, and documented in NRC Report No. 70-1151/2008-002, dated May 29, 2008.

On July 9, 2008, a predecisional enforcement conference was conducted at NRC's Region II office with you and members of your staff to discuss the significance and root causes of the apparent violations, and your corrective actions. At the conference, Westinghouse Electric Company (WEC) provided details of its immediate response to the incident, its onsite and offsite search for the two containers, corrective actions, and conclusions on the safety significance of the incident. WEC stated that the two containers likely were inadvertently sent to a local landfill, although no physical evidence exists to substantiate this scenario. As confirmed by the NRC's reactive inspection, the total amount of uranium hexafluoride in the two containers was approximately 200 grams, with 128 grams of uranium at an average enrichment of 4.95 percent uranium-235. The total uranium amount of 128 grams had a radioactivity content of approximately 409 microcuries. WEC acknowledged that the three violations occurred as stated in the NRC's inspection report of May 29, 2008, and concluded that the cumulative safety significance should not warrant escalated enforcement action based on the actual risk of the event and the corrective actions taken by WEC.

Based on the information developed during the inspection and the information provided during the conference, the NRC has determined that three violations of NRC requirements occurred. The violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the NRC's inspection report of

May 29, 2008. In summary, the three violations involved: (1) the failure to follow facility procedures requiring the administrative tracking of the 16 vials of uranium hexafluoride upon receipt and while the vials were on site, and failure to follow a facility procedure requiring confirmation that the shipping containers and shipping materials were free of contamination, via proper surveys, before discarding the containers; (2) the failure to secure from unauthorized removal or access 16 sample vials of uranium hexafluoride that were stored in a controlled area, and failure to control and maintain constant surveillance of the sample vials when not in storage, as required by 10 CFR 20.1801 and 20.1802; and (3) the failure of an individual to annotate in WEC's Electronic Training and Procedure Systems (ETAPS), as an End User, that he had read and acknowledged the procedure governing the disposal of empty shipping containers, as required by procedure.

Prior to the conference, WEC provided the results of two analyses of the long-term risks associated with the incident. The analyses were conducted by an independent contractor, and used an assessment methodology from the U. S. Department of Energy for evaluation of long-term potential risks associated with land disposal of radioactive materials assuming that the two containers were disposed of as regular solid waste and sent to a local public landfill. The second analysis considered the potential risks associated with disposal at a metal recycling facility. The analyses considered the potential for chemical exposure, as well as all significant radiation exposure pathways, including direct exposure to external radiation from contaminated soil, internal dose from inhalation, and internal dose from ingestion. Based on the analyses, WEC concluded that the potential radiation and chemical exposure risks posed by the sample vials were small when compared to exposure and natural background radiation levels, and when compared to emergency response planning guideline thresholds for acute exposures.

In this case, there are no indications of any actual radiation or chemical exposures as a result of WEC's loss of control of the 16 uranium hexafluoride vials. However, the NRC views any loss of control or release of licensed material to be significant. Based on a review of the methodology and overall conclusions of WEC's independent analyses, the NRC agrees that the potential consequences to the public and environment are limited. However, this incident highlights that WEC failed to ensure that work practices and administrative barriers and controls were adequate to preclude the loss of licensed material. Based on the above, and because the three violations are related to the loss of licensed material, the NRC has characterized the violations collectively as a Severity Level III Problem, in accordance with the NRC Enforcement Policy.

In accordance with the Enforcement Policy, a base civil penalty in the amount of \$32,500 is considered for each Severity Level III violation or problem. Because WEC has been the subject of escalated enforcement within the past two years<sup>1</sup>, the NRC considered whether credit was warranted for *Identification* and *Corrective Action* in accordance with the civil penalty assessment process in Section VI.C.2 of the Enforcement Policy.

The event was identified by WEC personnel on February 12, 2008, during preparation of routine receipt transaction documentation. As such, credit is warranted for the factor of *Identification*.

As presented at the conference, WEC's corrective actions included: (1) searches for the material on the plant site and at nearby trash disposal and metal recycling locations; (2) the conduct of a plant-wide stand down to communicate the details of the event and reinforce procedural adherence; (3) the modification of laboratory sample storage locations for sample containers;

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<sup>1</sup> A Severity Level III violation was issued on May 1, 2008, involving the actions of a WEC operator who disabled a calciner conversion line alarm acknowledgment pushbutton (EA-08-057).

(4) the revision of procedures and training to strengthen sample handling and storage processes; (5) increased management oversight of laboratory operations; (6) the implementation of inspections by independent Health Physics personnel to confirm sample containers are empty prior to disposal; and (7) disciplinary action. Based on the above, credit is warranted for the factor of *Corrective Action*.

Therefore, I have been authorized, after consultation with the Director, Office of Enforcement, to propose that a civil penalty not be assessed in this case. However, significant violations in the future could result in a civil penalty. In addition, issuance of this Severity Level III Problem constitutes escalated enforcement action that may subject you to increased inspection effort.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

For administrative purposes, this letter is issued as a separate NRC Inspection Report, 70-1151/2008-005, and the above violations are identified as VIO 70-1151/2008-005-01, Failure to transfer SNM samples as required by procedure, and failure to conduct required surveys of empty shipping containers; VIO 70-1151/2008-005-02, Failure to prevent unauthorized removal and failure to control and maintain surveillance of licensed material; and VIO 70-1151/2008-005-03, Failure to read and acknowledge procedures governing job responsibilities. Accordingly, apparent violations 70-1151/2008-02-01, -02, and -03 are closed.

In accordance with 10 CFR 2.390 of NRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agency-Wide Document Access and Management System (ADAMS) on the Internet at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, if you choose to respond, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Sincerely,

/RA/ By Victor M. M. McCree Acting For

Luis A. Reyes  
Regional Administrator

Docket No. 70-1151  
License No. SNM-1107

Enclosure: Notice of Violation

cc w/encl: (see page 4)

C. Alstadt

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cc w/encl:

Marc Rosser, Manager  
Environment, Health and Safety  
Commercial Nuclear Fuel Division  
Electronic Mail Distribution

Susan Jenkins, Section Leader  
Division of Waste Management  
Bureau of Land and Waste Management  
Electronic Mail Distribution

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R. Borchardt, OEDO  
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 Enforcement Coordinators  
 RI, RIII, RIV  
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 P. Habighorst, NMSS  
 N. Baker, NMSS  
 M. Adams, NMSS  
 N. Rivera, NMSS  
 D. Morey, NMSS  
 L. Reyes, RII  
 V. McCree, RII  
 J. Shea, RII  
 M. Layton, RII  
 C. Evans, RII  
 S. Sparks, RII  
 D. Rich, RII  
 R. Gibson, RII  
 K. Clark, RII  
 R. Hannah, RII  
 R. Trojanowski, RII  
 OEMAIL  
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ADAMS: X Yes      ACCESSION NUMBER: \_\_\_\_\_

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SIGNATURE	DWR	JWS	CFE				
NAME	DRich	JShea	CEvans	JWray	JWray	PHabighorst	
DATE	7/28/08	7/29/08	7/28/08		8/05/08	8/05/08	
E-MAIL COPY?	YES	YES	YES	YES	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY      DOCUMENT NAME:

## NOTICE OF VIOLATION

Westinghouse Electric Company  
Columbia, SC

Docket No. 70-1151  
License No. SNM-1107  
EA-08-165

During an inspection completed by the NRC on February 28, 2008, violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are set forth below:

- A. Safety Condition S-1 of Special Nuclear Materials License No. SNM-1107 authorizes the use of material in accordance with the statements, representations, and conditions in the license application dated June 27, 2007, and supplements thereto.

Section 3.4.1 of the license application states that operations to assure safe, compliant activities involving nuclear material are conducted in accordance with approved procedures.

Product Storeroom Operating Procedure ST 005, "Deliver Material Received from Vendors," Revision 3, October 25, 2007, Section 1.7.A, required the tracking number to be logged along with the vendor name, carrier identification and any pertinent information on CF-ST-001 (log Sheet). Product Storeroom Operating Procedure ST 011, "Deliver material to Customers," Revision 3, September 2, 2004, Section 1.8, required a signature receipt from the receiver of the package on to the log sheet.

Quality Control Instructions QCI No. 119906, "Receipt & Chemical Analysis of UF<sub>6</sub> Samples," Revision 11, January 8, 2007, Section I.A.6 requires, in part, that the performer confirm that the shipping container and shipping materials are free of contamination by surveying the inside and the outside of the shipping container before discarding.

Contrary to the above, on February 4, 2008, a shipping and receiving clerk delivered cans containing 16 sample vials of uranium hexafluoride to the chemical laboratory and did not log the tracking number along with the vendor name, and carrier identification on the log sheet, and did not obtain a signature from the receiver of the package on to the log sheet. In addition, a Team Manager discarded two containers, each containing eight vials of uranium hexafluoride, without confirming that the shipping containers and shipping materials were free of contamination, or surveying the inside of the containers before discarding.

- B. 10 CFR 20.1801 states that the licensee shall secure from unauthorized removal or access licensed materials that are stored in controlled or unrestricted areas. 10 CFR 20.1802 states that the licensee shall control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage.

Contrary to the above, on February 4, 2008, the licensee did not secure from unauthorized removal or access 16 sample vials of uranium hexafluoride (licensed material) that were stored in a controlled area, nor did they control and maintain constant surveillance of the sample vials when they were not in storage. Specifically, the sample vials of licensed material were discarded.

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- C. Safety Condition S-1 of Special Nuclear Materials License No. SNM-1107 authorizes the use of material in accordance with statements, representations, and conditions in the license application dated June 27, 2007, and supplements thereof.

Section 3.4.1 of the license application states that operations to assure safe, compliant activities involving nuclear material are conducted in accordance with approved procedures.

Columbia Plant Administrative Procedure CA-002, "Columbia Plant Procedure System," Revision 33, April 4, 2007, Section 3.13 states, in part, that Electronic Training and Procedure Systems (ETAPS) End Users must read and then acknowledge procedures governing their job responsibilities in ETAPS before performing work assignments or manufacturing processes.

Contrary to the above, on February 4, 2008, a Team Manager disposed of two shipping containers and associated shipping materials, containing 16 sample vials of uranium hexafluoride, and did not sign in ETAPS as an End User that he had read and acknowledged the procedure governing that work assignment prior to performing it.

This is a Severity Level III problem (EA-08-165, Supplement VI).

Pursuant to the provisions of 10 CFR 2.201, Westinghouse Electric Company is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region II, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-08-165" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may Reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your

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response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 6<sup>th</sup> day of August 2008