



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

November 3, 2010

EA-10-124  
EN 45655

Mr. David Precht  
Acting Manager, Columbia Plant  
Westinghouse Electric Company  
Commercial Nuclear Fuel Division  
5801 Bluff Road, Drawer R  
Columbia, SC 29250

SUBJECT: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTY -  
\$17,500 (NRC INSPECTION REPORT NUMBER 70-1151/2010-010)

Dear Mr. Precht:

This letter refers to the inspection completed prior to July 1, 2010, associated with activities at the Westinghouse Electric Company (Westinghouse) facility, located in Columbia, South Carolina. The purpose of the inspection was to review the circumstances surrounding an event in the quarantine tank (Q-Tank) system in the conversion area. The event involved the overflow of approximately 200 gallons of uranium bearing ammoniated waste water from Q-Tank V-116A into a diked area below the Q-Tank system on January 24, 2010. On January 25, 2010, Westinghouse submitted an event notification (EN 45655) to the NRC in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 70 Appendix A (b)(1). Based on the potential safety significance of the event, the NRC initiated a Special Inspection on February 1, 2010. The results of the Special Inspection, including the identification of seven apparent violations, were documented in NRC Inspection Report No. 70-1151/2010-001, dated August 12, 2010 (ML102240532).

On September 24, 2010, a predecisional enforcement conference was conducted at the NRC's Region II office with members of your staff to discuss the significance and root causes of the apparent violations and your corrective actions. At the conference, Westinghouse acknowledged the violations, and presented details of its corrective actions to prevent recurrence. During the conference, the NRC requested additional information from Westinghouse regarding its corrective actions and extent of condition reviews, which was subsequently provided by letter dated September 28, 2010 (ML102850423).

Based on the information developed during the inspection and the information that you provided during and after the conference, the NRC has determined that seven violations of NRC requirements occurred. Two violations are cited in Part I of the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in NRC Inspection Report No. 70-1151/2010-001. In summary, the violations of Part I involve: (Part I.A) the failure

to identify in the Integrated Safety Analysis that a spill in the quarantine tank system could lead to an intermediate consequence event in accordance with 10 CFR 70.62(c)(1); and (Part I.B) the failure to designate items relied on for safety to limit the risk of an intermediate consequence event resulting from an overflow of the quarantine tank system in accordance with 10 CFR 70.61(e).

The NRC concluded that the event of January 24, 2010, did not result in any actual consequences to workers or the environment because the workers donned appropriate personal protective equipment and the facility ventilation systems operated properly throughout the duration of the event. However, the potential consequences of the January 24, 2010, event were significant, due to the potential for an acute chemical exposure to a worker that could lead to irreversible or serious long lasting health effects. As discussed in the NRC's Special Inspection report of August 12, 2010, the event occurred because of Westinghouse's inadequate problem identification and resolution, and an inadequate risk assessment system. As a result, Westinghouse failed to prevent spills from occurring, failed to evaluate that a spill in the quarantine tank system could lead to an intermediate consequence event, and therefore failed to implement items relied on for safety to prevent or mitigate the risk. Based on the above, and because violations I.A and I.B are interrelated, the significance of these violations has been characterized collectively as a Severity Level III Problem in accordance with the Enforcement Policy.

In accordance with the NRC's Enforcement Policy, a base civil penalty in the amount of \$17,500 is considered for a Severity Level III Problem. Since Westinghouse has been the subject of escalated enforcement within the past two years<sup>1</sup>, NRC considered whether credit was warranted for *Identification* and *Corrective Action* in accordance with the civil penalty assessment process in Section 2.3.4 of the Enforcement Policy. The NRC has concluded that credit is not warranted for the factor of *Identification* because the violations in Part I of the Notice were identified as the result of an event.

Corrective actions taken by Westinghouse included, but were not limited to: 1) addition of a high-high quarantine tank alarm; 2) addition of control room indicators for Q-Tank system pump operation; 3) installation of larger pump motors; 4) development of and training on alarm response procedures; 4) implementing appropriate personal protective equipment as an item relied on for safety; and 5) completion of an extent of condition review to determine if items relied on for safety are needed in other areas of the facility with regard to chemical exposures. Based on your current and proposed corrective actions, the NRC has concluded that *Corrective Action* credit is warranted.

Therefore, to emphasize the importance of complying with 10 CFR 70, and in recognition of previous escalated enforcement actions, I have been authorized, after consultation with the Director, Office of Enforcement, to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty in the base amount of \$17,500 for the Severity Level III Problem.

The remaining five violations are cited in Part II of the enclosed Notice, and involve: (Part II.A) the failure to suspend movement of special nuclear material within one hour of the criticality

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<sup>1</sup>A Severity Level III Problem was issued on August 6, 2008, regarding the loss of enriched uranium hexafluoride in sample vials (EA-08-165).

accident alarm system being inoperable, as required by your license; (Part II.B) the failure to develop and/or implement alarm response procedures for the quarantine tank system as required by your license; (Part II.C) the failure to classify the spill as a Local Response Event in accordance with the Emergency Plan as required by your license; (Part II.D) the failure to implement Site Emergency Plan Procedures when aware of airborne ammonia concentrations as required by your license; and (Part II.E) the failure to implement Site Emergency Plan Procedures when aware of the alarming criticality accident alarm system in accordance with the Emergency Plan as required by your license. The significance of violations II.A and II.B has been characterized as separate Severity Level IV violations in accordance with the Enforcement Policy. Because violations II.C, II.D, and II.E are interrelated, the significance of these violations has been characterized collectively as a Severity Level IV Problem in accordance with the Enforcement Policy.

For administrative purposes apparent violations 70-1151/2010-001-01, 70-1151/2010-001-02, 70-1151/2010-001-03, 70-1151/2010-001-04, 70-1151/2010-001-05, 70-1151/2010-001-06, and 70-1151/2010-001-07, are considered closed and the following violations are opened 70-1151/2010-010-01 (Part I.A and I.B), 70-1151/2010-010-02 (Part II.A), 70-1151/2010-010-03 (Part II.B), and 70-1151/2010-010-04 (Part II.C, II.D, and II.E).

You are required to respond to this letter and should follow the instruction specified in the enclosed Notice when preparing your response. In addition, NRC requests the results of your extent of condition review be included in your response. Specifically, NRC requests additional information regarding the areas that were determined to be improperly analyzed and the items relied on for safety being utilized to reduce the risk of a chemical exposure. NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and 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>. The NRC also includes significant enforcement actions on its Web site at <http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions>.

D. Precht

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Should you have any questions concerning this letter, please contact Mr. Anthony Gody at (404) 997- 4700.

Sincerely,  
*/RA/*

Luis A. Reyes  
Regional Administrator

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

Enclosures:

1. Notice of Violation and Proposed Imposition of Civil Penalty
2. NUREG/BR-0254 Payment Methods (Licensee Only)

cc w/encls:

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

Susan E. Jenkins  
Assistant Director, Division of Waste Management  
Bureau of Land and Waste Management  
Department of Health and Environmental Control  
Electronic Mail Distribution

X PUBLICLY AVAILABLE

X NON-SENSITIVE

ADAMS: X Yes    ACCESSION NUMBER: \_\_\_\_\_

X SUNSI REVIEW COMPLETE

OFFICE	RII:DFFI	RII:DFFI	RII:EICS	RII:DFFI	OE	OGC	NMSS
SIGNATURE	*CMC3	*MDS1	*CFE	*ATG	Via email	Via email	Via email
NAME	CCramer	MSykes	CEvans	AGody	JWray	MClark	CHaney
DATE	10/19/2010	10/19/2010	10/21/2010	10/20/2010	10/28/2010	10/28/2010	10/28/2010
E-MAIL COPY?	YES    NO						
OFFICE	RII:DRAO						
SIGNATURE	VMM*						
NAME	VMcCree						
DATE	11/1/2010	11/ /2010	11/ /2010	11/ /2010	11/ /2010	11/ /2010	11/ /2010
E-MAIL COPY?	YES    NO						

OFFICIAL RECORD COPY

DOCUMENT NAME: P:\IR 2010-010 EA-10-124.DOCX

Letter to: David Precht from Luis A. Reyes dated November 3, 2010

Subject: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTY -  
\$17,500 (NRC INSPECTION REPORT NUMBER 70-1151/2010-010)

Distribution w/encls:

R. Borchardt, OEDO

M. Weber, OEDO

C. Haney, NMSS

D. Dorman, NMSS

C. Scott, OGC

R. Zimmerman, OE

E. Julian, SECY

B. Keeling, OCA

Enforcement Coordinators

RI, RIII, RIV

E. Hayden, OPA

C. McCrary, OI

H. Bell, OIG

J. Wray, OE

L. Reyes, RII

V. McCree, RII

T. Gody, RII

E. Cobey, RII

M. Sykes, RII

M. Thomas, RII

C. Evans, RII

S. Sparks, RII

R. Hannah, RII

J. Ledford, RII

R. Trojanowski, RII

M. Tschiltz, NMSS

P. Habighorst, NMSS

C. Ryder, NMSS

N. Baker, NMSS

OE Mail

PUBLIC

NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTY

Westinghouse Electric Company  
Columbia, SC

Docket No. 70-1151  
License No. SNM-1107  
EA-10-124

During an NRC inspection completed on April 22, 2010, violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the NRC proposes to impose a civil penalty pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205. The particular violations and associated civil penalty are set forth below:

I. Violations Assessed a Civil Penalty

- A. 10 CFR 70.62(c)(1) states, in part, that each licensee shall conduct and maintain an integrated safety analysis, that is of appropriate detail for the complexity of the process, that identifies:
- (ii) Chemical hazards of licensed material and hazardous chemicals produced from licensed material;
  - (iv) Potential accident sequences caused by process deviations or other events internal to the facility and credible external events, including natural phenomena; and
  - (v) The consequence and the likelihood of occurrence of each potential accident sequence identified pursuant to paragraph (c)(1)(iv) of this section, and the methods used to determine the consequences and likelihoods.

Contrary to the above, prior to January 24, 2010, the licensee failed to conduct and maintain an integrated safety analysis that identified potential consequences and likelihood of an accident sequence involving a chemical hazard. Specifically, the licensee failed to identify that an overflow in the Q-Tank area could lead to an intermediate consequence event involving excessive concentrations of airborne ammonia.

- B. 10 CFR 70.61(c)(4)(i) states, in part, that the risk of each credible intermediate-consequence event must be limited. Engineered controls, administrative controls, or both shall be applied to the extent needed so that, upon implementation of such controls, the event is unlikely or its consequences are less than those in paragraphs (c)(1)-(4) of this section. Intermediate consequence events are those internally and externally initiated events that are not high consequence events that result in an acute chemical exposure to an individual from licensed material or hazardous chemicals produced from licensed material that could lead to irreversible or other serious, long-lasting health effects to a worker.

Enclosure

Table 4.3, "Risk Evaluation Table," of the license application defines an intermediate consequence event as, "Greater than or equal to Emergency Response Planning Guidelines (ERPG)-2 chemical exposure to a worker."

The American Industrial Hygiene Association defines ERPG-2 levels for airborne concentration of ammonia as greater than 150 parts per million.

10 CFR 70.61(e) states, in part, that each engineered or administrative control or control system necessary to comply with paragraphs (b), (c), or (d) of this section shall be designated as an item relied on for safety.

Contrary to the above, prior to January 24, 2010, the licensee failed to designate engineered or administrative controls or control systems as items relied on for safety, when necessary to comply with paragraph 10 CFR 70.61(c). Specifically, the licensee failed to implement items relied on for safety for the quarantine tank system to reduce the risk of an event which results in an acute chemical exposure which could lead to irreversible or serious long-lasting health effects to a worker.

This is a Severity Level III Problem (Supplement 6.2)  
Civil Penalty - \$17,500

## II. Violations Not Assessed a Civil Penalty

- A. Safety Condition No. S-1 of Special Nuclear Material License No. 1107 requires that material be used in accordance with statements, representations, and conditions in the license application dated June 27, 2007, or as revised, pursuant to 10 CFR 70.32 or 10 CFR 70.72 and the supplements thereto.

Section 6.1.8, "Criticality Accident Alarm System (CAAS)," of the license application states, in part, that if the CAAS is out-of-service, within one hour the [Columbia Fuel Fabrication Facility] will suspend movement and processing of fissile material in the coverage area until the process is brought to a safe shutdown condition.

Contrary to the above, on January 24, 2010, the licensee failed to suspend movement and processing of fissile material in the coverage area of CAAS 15, within one hour of CAAS 15 being out-of-service from 11:21 p.m. on January 23, 2010 through 5:37 a.m. on January 24, 2010.

This is a Severity Level IV Violation (Supplement 6.2)

- B. Safety Condition No. S-1 of Special Nuclear Material License No. 1107 requires that material be used in accordance with statements, representations, and conditions in the license application dated June 27, 2007, or as revised, pursuant to 10 CFR 70.32 or 10 CFR 70.72 and the supplements thereto.

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

Contrary to the above, on and before January 24, 2010, the licensee failed to develop and/or implement alarm procedures to assure safe operations of the quarantine tank system in response to installed process alarms.

This is a Severity Level IV Violation (Supplement 6.2)

- C. Safety Condition No. S-2 of Special Nuclear Material License No. 1107 requires, that the licensee shall maintain and execute the response measures in Chapters 1.0 through 10.0 of its "Site Emergency Plan for the Columbia Fuel Fabrication Facility," dated October 1, 2008; or as further revised by the license consistent with 10 CFR 70.32(i).

Section 7.1 of the Site Emergency Plan states, in part, that written implementing procedures will be established containing detailed instructions on emergency response and statements of responsibility based on the policy established in this Site Emergency Plan. These procedures will clearly define duties, responsibilities, action levels, and actions to be taken by each functional group or individual in response to emergency conditions.

Site Emergency Plan Procedure (SEP) – 002, Section 6.1 states, in part, that the Incident Commander shall perform a size-up of the incident scene and determine the resources needed. Section 6.5 of SEP-002 states, in part, that the Incident Commander working with the Emergency Director shall decide on the classification of the event based on guidelines in Section 6.1, 6.2 and 6.3. Section 6.1.1 of SEP-002 defines a Local Response Event as any emergency event causing deviation from normal operations which can be managed within the confines of the plant site and control of the situation can be achieved in less than 15 minutes (less than 24 hours for powder/liquid spill). Included as an example is a controlled release of toxic gas or hazardous material where the source of the release can be isolated and there is no threat of escalation.

Contrary to the above, on January 24, 2010, following a spill of approximately 200 gallons of ammoniated waste water with maximum airborne concentration measured of 256 parts per million, the Incident Commander failed to classify the spill as a Local Response Event in accordance with Section 6.1.1 of SEP-002.

- D. Safety Condition No. S-2 of Special Nuclear Material License No. 1107 states, that the licensee shall maintain and execute the response measures in Chapters 1.0 through 10.0 of its "Site Emergency Plan for the Columbia Fuel Fabrication Facility," dated October 1, 2008; or as further revised by the license consistent with 10 CFR 70.32(i).

Section 7.1 of the Site Emergency Plan states, in part, that written implementing procedures will be established containing detailed instructions on emergency response and statements of responsibility based on the policy established in this Site Emergency Plan. These procedures will clearly define duties, responsibilities, action levels, and actions to be taken by each functional group or individual in response to emergency conditions.

Site Emergency Plan Procedure (SEP) – 001, Section 6.1.3 states, in part, that the Incident Commander shall immediately conduct a size up of the incident scene and

initiate correct controlled form(s) as listed in Section 7.2 . Controlled Form SEPF-001-8, "Hazardous Materials Release," Section 2.0 states, in part, that the Incident Commander activate Blue Light Visual Warning System, instruct Security to announce all personnel in the area evacuate, and communicate with the Emergency Director.

Contrary to the above, on January 24, 2010, the Incident Commander failed to: 1) activate the Blue Light Visual Warning System; 2) instruct Security to announce all personnel in the area evacuate; and 3) communicate with the Emergency Director in response to the ammonia airborne concentrations that were measured inside the conversion area as required by procedures.

- E. Safety Condition No. S-2 of Special Nuclear Material License No. 1107 states, that the licensee shall maintain and execute the response measures in Chapters 1.0 through 10.0 of its "Site Emergency Plan for the Columbia Fuel Fabrication Facility," dated October 1, 2008; or as further revised by the license consistent with 10 CFR 70.32(i).

Section 7.1 of the Site Emergency Plan states, in part, that written implementing procedures will be established containing detailed instructions on emergency response and statements of responsibility based on the policy established in this Site Emergency Plan. These procedures will clearly define duties, responsibilities, action levels, and actions to be taken by each functional group or individual in response to emergency conditions.

Site Emergency Plan Procedure (SEP) – 001, Section 6.1.3 states, in part, that the Incident Commander shall immediately conduct a size up of the incident scene and initiate correct controlled form(s) as listed in Section 7.2 . Controlled Form SEPF-001-5, "Criticality Accident," Section 2.0 states, in part, that the Incident Commander activate Blue Light Visual Warning System, instruct Security to announce the criticality alarm has been activated all personnel evacuate immediately, and communicate with the Emergency Director and identify any systems that may need to be shutdown or isolated.

Contrary to the above, on January 23, 2010, the Incident Commander failed to: 1) activate the Blue Light Visual Warning System; 2) instruct Security to announce all personnel in the area evacuate; and 3) communicate with the Emergency Director, in response to the activation of the criticality accident alarm system, number 15.

This is a Severity Level IV Problem (Supplement 6.2)

Pursuant to the provisions of 10 CFR 2.201, Westinghouse Electric Company (Licensee) is hereby required to submit a written statement or explanation to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, within 30 days of the date of this Notice of Violation and Proposed Imposition of Civil Penalty (Notice). This reply should be clear marked as a "Reply to a Notice of Violation: (EA-10-124)" and should include for each alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation if admitted, and if denied, the basis for denying the validity of the violation; (3) the corrective steps that have been taken and the results achieved; (4) the corrective steps that will be taken; and (5) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addressed the required response.

If an adequate reply is not received within the time specified in this Notice, the NRC may issue an order or a Demand for Information requiring you to explain why your license should not be modified, suspended, or revoked, or why the NRC should not take other action as may be proper. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time provided for the response required under 10 CFR 2.201, the Licensee may pay the civil penalty proposed above in accordance with NUREG/BR-0254 and by submitting to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, a statement indicating when and by what method payment was made, or may protest imposition of the civil penalty in whole or in part, by a written answer addressed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission. Should the Licensee fail to answer within 30 days of the date of this Notice, the NRC will issue an order imposing the civil penalty. Should the Licensee elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalty, in whole or in part, such answer should be clear marked as an "Answer to a Notice of Violation" and may: (1) deny the violations listed in this Notice, in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalty should not be imposed. In addition to protesting the civil penalty in whole or in part, such answer may request remission or mitigation of the penalty.

In requesting mitigation of the proposed civil penalty, the response should address the factors addressed in Section 2.3.4 of the Enforcement Policy. Any written answer addressing these factors pursuant to 10 CFR 2.205, should be set forth separately from the statement or explanation provided pursuant to 10 CFR 2.201, but may incorporate parts of the 10 CFR 2.201 reply by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The attention of the Licensee is directed to the other provisions of 10 CFR 2.205, regarding the procedure for imposing a civil penalty.

Upon failure to pay any civil penalty which subsequently has been determined in accordance with the applicable provisions of 10 CFR 2.205 to be due, this matter may be referred to the Attorney General, and the penalty unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282c.

The responses noted above, i.e., Reply to Notice of Violation, Statement as to payment of civil penalty, and Answer to a Notice of Violation, should be addressed to: Roy P. Zimmerman, Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852-2738, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region 2.

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), to the extent possible, it should not include any personal privacy or proprietary information, so that it can be made available to the public without redaction. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request that such material is withheld from public disclosure, you must specifically identify the portions of your response that you seek to have

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withheld and provide in detail the bases for your claim (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 of receipt.

Dated this 3rd day of November 2010