



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

July 7, 2005

EA-05-104

Mr. Hank A. Sepp  
Project Director, Decommissioning  
Westinghouse Electric Company, LLC  
Hematite Fuel Manufacturing Facility  
3300 State Road P  
Festus, MO 63028

**SUBJECT: PREDECISIONAL ENFORCEMENT CONFERENCE SUMMARY**

Dear Mr. Sepp:

This refers to the predecisional enforcement conference held on June 22, 2005, with Mr. Michael Saunders, Senior Vice President, Nuclear Fuels, you, and other representatives of the Westinghouse Electric Company, Hematite, Missouri, facility in the Region III office located in Lisle, Illinois, to discuss the apparent violations identified in NRC Inspection Report No. 070-00036/2005-001(DNMS). The apparent violations were associated with your staff's failure to fully implement nuclear criticality safety controls. The root causes of the violations were attributed to production pressure and poor management oversight of the criticality safety program.

The conference was open to the public; however, no members of the general public attended. The attendance list is enclosed with this summary as Enclosure A, and Enclosure B is the handout you presented at the conference.

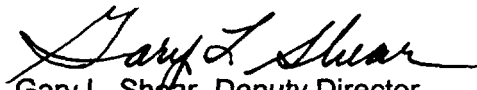
During your presentation, you did not attribute any criticality safety significance to the three apparent violations. However, following discussion during the conference, you agreed that while none of the apparent violations resulted in any significant criticality safety consequences, the apparent violations represented potentially significant criticality safety concerns requiring immediate, comprehensive, and long-lasting corrective actions. While no actual criticality safety consequences resulted from the apparent violations, the NRC highlighted the need for continuing extensive management attention to the issues. This distinction between safety significance and safety consequence is important, since we would not have requested your attendance at the conference if the apparent violations were not potentially safety significant.

The corrective actions described in the inspection report were also discussed during the conference. Two corrective actions not discussed in the inspection report involved your implementation of the "Valuing the Prevention of Errors" human performance improvement program, and several management changes at the facility.

You will be informed by separate correspondence of the results of our deliberations in the matters which were the subject of the conference. You are not required to respond to this letter. If you have any questions regarding this letter or its enclosures, you may contact me at (630) 829-9801.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). The NRC's document system is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

  
Gary L. Shear, Deputy Director  
Division of Nuclear Materials Safety

Docket No. 070-00036  
License No. SNM-00033

Enclosures:   A.     Predecisional Enforcement  
                            Conference Attendance List  
                  B.     Licensee's Presentation

H. Sepp

-2-

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Sincerely,

/RA/

Gary L. Shear, Deputy Director  
Division of Nuclear Materials Safety

Docket No. 070-00036  
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## **Westinghouse Hematite Predecisional Enforcement Conference**

Wednesday, June 22, 2005

### **Westinghouse Representatives**

Michael J. Saunders, Senior Vice President  
Hank A. Sepp, Decommissioning Director  
Tracy D. Chance, Radiation Safety Officer  
Michele M. Gutman, Counsel  
Kevin R. Hayes, Environmental Health and Safety Manager  
John B. Justice, Criticality Safety Engineer, NISYS Corporation  
Nand K. Lambha, Criticality Safety Engineer, NISYS Corporation  
Gordan M. Vytlačil, Licensing Manager

### **NRC Representatives**

#### **Region III**

Geoffrey E. Grant, Deputy Regional Administrator  
Gary L. Shear, Deputy Director, Division of Nuclear Materials Safety  
Steven J. Reynolds, Deputy Director, Division of Reactor Projects  
Bruce A. Berson, Regional Counsel  
Jamnes L. Cameron, Chief, Decommissioning Branch, Division of Nuclear Materials Safety  
Kenneth G. O'Brien, Enforcement Officer

#### **Office of Nuclear Material Safety and Safeguards**

Dennis Morey, Senior Criticality Safety Inspector, Division of Fuel Cycle Safety and Safeguards  
Amy Snyder, Senior Project Manager, Division of Waste Management and Environmental Protection

#### **Office of Enforcement**

Audrey Hayes, Enforcement Specialist - Materials (by telephone)  
Gregory Morell, Nuclear Material Safety and Safeguards Enforcement Coordinator (by telephone)

Enclosure A

Westinghouse Electric Company LLC  
Presentation to the

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Enclosure B

# US Nuclear Regulatory Commission Predecisional Enforcement Conference

Regarding  
NRC Inspection Report No.  
07000036/2005-001(DNMS)

June 22, 2005

# Agenda

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- Opening Remarks M. Saunders, Sr. VP
- Introduction H. A. Sepp
- NRC Findings
- WEC Analysis of NCS Issues
  - Corrective Actions – Immediate/Short Term
  - Ongoing Corrective Actions
- Mitigation Factors and Discretionary Considerations
- Summary

# Opening Remarks

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- Safety is our top priority.
- Leadership Focus on “Valuing the Prevention of Errors”

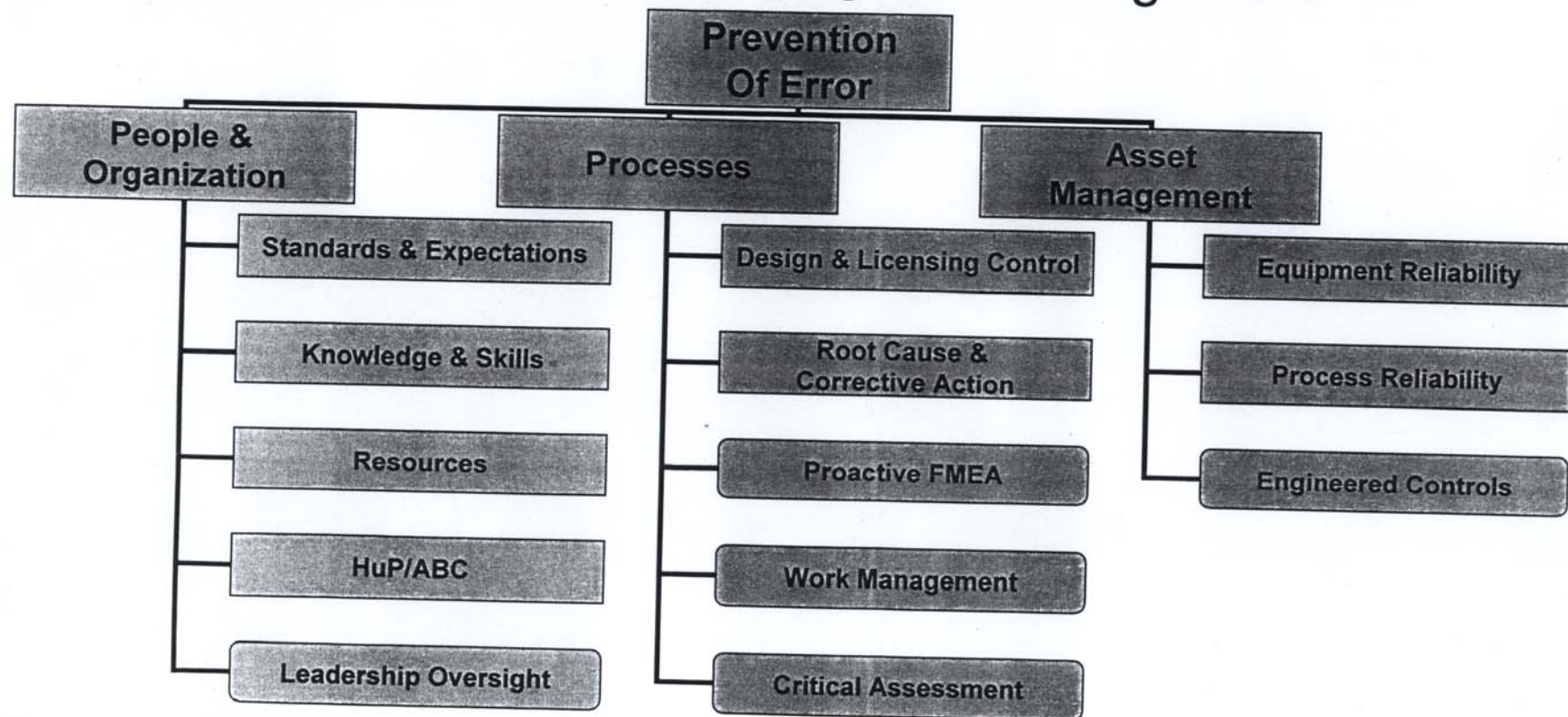
“Commitment to Continuous  
Improvement in  
Safety Performance”

- Westinghouse/NRC Executive Meeting, March 24, 2005.

# Nuclear Fuel Business

## Leadership focus

*Valuing the prevention of errors by providing resources, oversight and engaging line management*





# Introduction

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- Westinghouse (WEC) is here to discuss apparent violations involving implementation of nuclear criticality safety controls.
- NRC IR07000036/2005-001 (DNMS) dated June 8, 2005, documents the NRC's current perspective of the Hematite project's implementation of nuclear criticality safety controls and noted three apparent violations.

# Introduction (continued)

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- The purpose of this presentation is to provide the WEC perspective on these apparent violations, including safety significance, root cause assessment, corrective actions, mitigation factors and discretionary considerations.
- WEC remains committed to safety as a top priority and continuous improvement in safety performance.
- At no time during the D&D operations was there a risk that a criticality could occur because of these apparent violations.

# Background

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- 6/2001 - Production ceased/decommissioning begins.
- 2002 - Inventory/usable equipment shipped off-site.
- 2003 - Small equipment shipped off-site for disposal.
- 1/2004 - LVI contracted to conduct major equipment removal, waste disposal and building demolition. WEC to provide oversight.
- 10/2004 - LVI began major equipment removal.
- 12/2004 - Project reorganization to address project weaknesses:
  - Organizational alignment.
  - Criticality safety evaluation implementation.
  - Management oversight.

# Background (Continued)

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- 1/4-7/2005 - WEC/NISYS self-assessment.
- 1/10/2005 - WEC self-imposed work stoppage.
- 1/10/2005 - NRC inspection commenced.
- 1/28/2005 - WEC extends SNM work stoppage.
- 2/24/2005 - WEC conducts Readiness Review.
- 3/1/2005 - WEC conducts restart review by POC.
- 3/2005 - WEC Executive Management restart review.
- 3/24/2005 - NRC/WEC Senior Management meeting.
- 4/27/2005 - NRC inspection completed.
- 4/28/2005 - SNM operations resume.

# Westinghouse Response to NRC's Finding of Apparent Violations

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- NRC IR 07000036/2005-001 (DNMS), dated June 8, 2005, documents three findings of apparent violations.

APV-01 Failure to store two high efficiency particulate air (HEPA) filter housings in accordance with approved criticality safety limits and controls.

APV-02 Failure to incorporate nuclear criticality safety controls into procedures.

APV-03 Failure to determine the fissile mass of objects prior to placement into a nuclear criticality safety storage array.

# Westinghouse Response to NRC's Finding of Apparent Violations (Continued)

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APV-01 WEC acknowledges the apparent violation regarding inadequate spacing of the two HEPA filter housings in violation of the approved posting.

- Posting required a minimum 12' spacing.
- Filter housings inadvertently moved to less than 12'.
- No criticality safety significance.
  - All HEPA filters housed in this equipment contained a combined total mass of 139 grams U-235.
  - ANSI 8.1 allows a subcritical mass of 1,500 grams U-235 with optimal conditions.
  - Maximum analyzed subcritical mass of 16,400 grams U-235 per single filter housing.

# Westinghouse Response to NRC's Finding of Apparent Violations (Continued)

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APV-02 WEC acknowledges the apparent violation regarding failure to incorporate NCSE controls into procedures.

- Issue was self-identified by WEC during January 2005 assessment, work was stopped and corrective action process initiated.
- No criticality safety significance:
  - Controls used: passive restraints, postings, and boundaries.
  - Workforce was trained to NCSE controls.
  - NCSE controls were in place.

# Westinghouse Response to NRC's Finding of Apparent Violations (Continued)

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APV-03 WEC acknowledges the apparent violation regarding determination of fissile mass of objects prior to placement in NCS storage array.

- Issue was self-identified by WEC during January 2005 assessment, work was stopped and corrective action process initiated.
- No criticality safety significance.
  - NCSE NISYS-NCS-1180-TR001 establishes that  $\leq$  700 grams U-235 per storage space is a safe mass.
  - No single item in storage exceeded limit.



# Analysis of NCS Issues

## Causal Review:

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- Root Causes
  - Inadequate criticality management oversight of criticality safety program implementation.
  - Perception that production is more important than procedural adherence. Project management not working/communicating effectively.
- RCA report dated March 29, 2005
  - Submitted to the NRC.
  - Discussed failed barriers and causal factors.
- Additional factor “Valuing the Prevention of Errors”

# Analysis of NCS Issues

## Corrective Actions – Immediate/Short Term:

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- Suspended handling of SNM.
- Added Criticality Safety manager position and additional staff.
- Reorganized project to improve project coordination and communication.
- Initiated root cause analysis.
- Increased staff project status meetings (monthly to three times weekly).
- Enhanced oversight to verify NCS compliance.

# Analysis of NCS Issues

## Corrective Actions – Immediate/Short Term:

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- Conducted extensive procedure revisions, verification, and training to:
  - Implement NCSE controls.
  - Strengthen project oversight.
  - Reflect the reorganization.
- Conducted audits to independently verify applicable NCSE controls were incorporated into procedures.

# Analysis of NCS Issues

## Ongoing Corrective Actions:

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- “Valuing the Prevention of Errors” program.
- Executive management oversight.
- Improvement of project management.
  - Project coordination.
  - Proactive planning.
- Use of human performance tools.
- Use of readiness reviews.
- Management staff changes.

# Comprehensive and Effective Corrective Actions

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- Corrective actions began immediately upon discovery.
- Areas identified for corrective actions are responsive to and address the apparent violations.
  - Organization aligned (one project team) - (APV-01,-02 & -03)
  - Key interface with NCSE contractor (NISYS) enhanced - (APV-01, -02 & -03)
  - NCSE controls incorporated into procedures - (APV-02)
  - Oversight procedures revised - (APV-01, 02 & -03)
  - Key management replacements - (APV-01, 02 & -03)

# Comprehensive and Effective Corrective Actions (continued)

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- The comprehensiveness of the corrective actions has been confirmed and validated based on correlation of the Root Cause Analysis, Readiness Review and Plant Oversight Committee meetings with the apparent violations contained in the NRC inspection report.
- Ongoing oversight activities.

# Summary of Safety Significance

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- Low inventory of U-235; dispersed in process equipment, surface contamination.
- NCSE provided analyses of upset conditions (e.g. evaluated as optimally moderated and fully reflected).
- Investigations did identify certain needed improvements in NCSE implementation program to address safety significance of procedural compliance for future D&D activities.
- As previously noted the identified issues represent no criticality safety significance based on risk.

# Mitigation Factors and Discretionary Considerations

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- Credit for *self-identification* is warranted:
  - WEC self-identified APV-02 & -03 during January walk-down.
- Credit for *prompt and comprehensive* corrective actions is warranted:
  - D&D operations were promptly stopped and immediate corrective actions were implemented.
  - WEC assigned appropriate resources to fully investigate the identified nonconformances and respond.



# Mitigation Factors and Discretionary Considerations

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- Focus has been on:
  - Safety of the employees and the public, and protection of the environment.
  - Valuing the Prevention of Errors.
  - Open candid communication with the NRC and other stakeholders.
- Based on the forgoing mitigation factors and discretionary considerations, the three apparent violations should be consolidated and not considered for escalated enforcement.

# Summary

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- The health and safety of employees and the public, and protection of the environment has been ensured.
- Management oversight has been strengthened.
- Management expectations have been communicated, understood and reinforcement will continue.
- Comprehensive corrective actions have been implemented.
- “Valuing the Prevention of Errors” is our commitment.
- Safety is our top priority.

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# Westinghouse Electric Company LLC