U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

EA No.	97-244
Report No.	70-1151/97-207
License No.	SNM-1107
Docket No.	70-1151
Licensee:	Westinghouse Electric Corporation Commercial Nuclear Fuel Division Columbia, SC 29250

Pre-Decisional Enforcement Conference Conducted at: Rockville, MD

Pre-Decisional Enforcement Conference Conducted on: October 29, 1997.

Prepared by:	W. Troskoski, Senior Chemical Engineer
Approved by:	Philip Ting, Chief Operations Branch Division of Fuel Cycle Safety and Safeguards, NMSS

Enclosure 1

EXECUTIVE SUMMARY

Westinghouse Electric Corporation
Predecisional Enforcement Conference Report

On October 29, 1997, a predecisional enforcement conference was held at NRC Headquarters, Rockville, Maryland, to discuss seven apparent violations identified in Inspection Report No. 70-1151/97-205. The conference provided an opportunity for Westinghouse Commercial Nuclear Fuel Division to discuss the seven apparent violations and to provide information concerning the corrective and preventive actions. The licensee acknowledged five of the violations, portions of one violation and denied one violation. The licensee described the corrective actions undertaken to correct the items of non-compliance, application of the lessons learned to prevent similar violations from occurring in the future, and committed to provide a finalized plan and schedule for lasting corrective actions by December 15, 1997 (see Enclosure 2).

In the opening remarks, the Director of the Division of Fuel Cycle Safety and Safeguards stated the reasons for the predecisional enforcement conference as it related to the two losses of volume/geometry criticality safety control events of June 23 and August 25, 1997. The Director explained that this meeting would provide Westinghouse Commercial Nuclear Fuel Division the opportunity to discuss the events and apparent violations identified during the August 25-29, 1997, safety inspection; to acknowledge or deny the apparent violations; and to identify the root causes and corrective actions. The Director indicated that the NRC was concerned that plant as-exists field conditions did not match design documents, nuclear criticality safety (NCS) implementing procedures and policies did not properly address a number of NCS activities, and improvements in communication between the licensee and NRC were still needed.

The NRC Enforcement Coordinator summarized the NRC's Enforcement Policy concerning the two events. The discussion included the purpose of the predecisional enforcement conference and the enforcement process before the NRC makes a final enforcement decision.

The Chief of the Operations Branch discussed the seven apparent violations identified in the inspection report which included:

1) The inadequate incident investigation of both events, including the failure to identify root causes and take timely corrective actions.

2) The failure to conduct an adequate criticality safety evaluation for the hopper and moisture dropout tanks.

3) The failure to functionally verify that the installed safety controls match the design documents.

4) The failure to update criticality safety evaluations to assure that all assumptions are justified, documented and independently reviewed.

5) The failure to control criticality safety evaluations in accordance with a management control program for licensed activity records.

6) The failure to make appropriate 4-hour notifications to the NRC Operations Center.

7) The failure to develop or implement NCS procedures and policies.

The licensee was in basic agreement with two of the three examples identified in Violation 01; generally agreed with Violations 02, 03, 04, & 07; acknowledged certain aspects of Violation 05; and disagreed with Violation 06. The licensee stated that it understands the seriousness of the current enforcement action, and the importance of maintaining safety at the plant and complying with NRC regulations, conditions of the license, and other NRC commitments. The licensee also noted that double contingency protection existed and that this was the basis for restart. When questioned by the staff, the licensee committed to provide additional information supporting the basis for restart of the pellet area ventilation system on August 26, 1997.

The licensee discussed the safety significance of the events, the root cause determinations, the findings of its Regulatory Process Review Team, corrective actions taken and planned, self-identification aspects, mitigation factors and discretionary considerations. The licensee stated that, based on the NRC's Enforcement Policy (NUREG 1600), the collective violations should be no greater than Severity Level III and that civil penalty mitigation was warranted due to:

1) Self-identification based on the extensive efforts after identifying the incidents in determining the root causes and programmatic corrective actions needed.

2) The prompt and comprehensive corrective actions.

3) Senior management attention from the highest levels of the Energy Systems' Business Unit.

4) The health and safety of the public was not compromised and double contingency existed at all times.

The meeting was adjourned.

Attendees

Westinghouse Commercial Nuclear Division

J. B. Allen, Columbia Plant Manager
L. A. Campagna, Assistant General Counsel
R. L. Ervin
W. L. Goodwin, Manager of Regulatory Affairs
J. W. Heath, Manager of Regulatory Engineering and Operations
R. A. Williams, Advisory Engineer Regulatory Affairs

NRC

E. W. Brach, Deputy Director, Fuel Cycle Safety and Safeguards
J. Davis, Nuclear Process Engineer, Operations Branch
C. Gaskin, Project Manager, Licensing Branch
P. Harich, Inspection Assistant, Operations Branch
P. S. Lee, Fire Protection Engineer, Operations Branch
N. Mamish, Office of Enforcement
W. Schwink, Chief, Inspection Section
G. Smith, Chemical Engineer, Operations Branch
E. Q. Ten Eyck, Director, Fuel Cycle Safety and Safeguards
P. Ting, Chief, Operations Branch
W. M. Troskoski, Sr. Chemical Engineer, Operations Branch
M. F. Weber, Chief, Licensing Branch
D. L. Whaley, Physical Scientist, Operations Branch

ENFORCEMENT CONFERENCE SLIDES

Enclosure 2

PREDECISIONAL ENFORCEMENT CONFERENCE AGENDA

WESTINGHOUSE ELECTRIC CORPORATION
COMMERCIAL NUCLEAR FUEL DIVISION

October 29, 1997 at 1:00 pm
NRC Headquarters, Rockville, Maryland

I. OPENING REMARKS AND INTRODUCTION
Elizabeth Q. Ten Eyck, Director
Division of Fuel Cycle Safety and Safeguards, NMSS

II. NRC ENFORCEMENT POLICY
Nader Mamish, Office of Enforcement

III. SUMMARY OF THE MATTER
Phil Ting, Chief
Fuel Cycle Operations Branch

IV. LICENSEE PRESENTATION
Jack Allen, Plant Manager
Westinghouse Columbia Fuel Fabrication Facility

V. BREAK/NRC CAUCUS

VI. NRC FOLLOWUP QUESTIONS

VII. CLOSING REMARKS
Elizabeth Q. Ten Eyck, Director
Division of Fuel Cycle Safety and Safeguards, NMSS

APPARENT VIOLATIONS

THE FOLLOWING IS A SUMMARY OF THE POTENTIAL VIOLATIONS THAT WERE PROVIDED IN GREATER DETAIL IN THE EXECUTIVE SUMMARY SECTION OF INSPECTION REPORT 97-205.

I. INADEQUATE INCIDENT INVESTIGATION OF BOTH EVENTS, INCLUDING FAILURE TO IDENTIFY ROOT CAUSES AND TAKE TIMELY CORRECTIVE ACTION.

II. FAILURE TO CONDUCT ADEQUATE CRITICALITY SAFETY EVALUATIONS FOR THE GRANULATOR HOPPER AND MOISTURE DROPOUT TANKS.

III. FAILURE TO FUNCTIONALLY VERIFY THAT INSTALLED SAFETY CONTROLS MATCH THE DESIGN DOCUMENTS.

IV. FAILURE TO UPDATE CRITICALITY SAFETY EVALUATIONS TO ASSURE THAT ALL ASSUMPTIONS ARE JUSTIFIED, DOCUMENTED AND INDEPENDENTLY REVIEWED.

V. FAILURE TO CONTROL CRITICALITY SAFETY EVALUATIONS IN ACCORDANCE WITH A MANAGEMENT CONTROL PROGRAM FOR LICENSED ACTIVITY RECORDS.

VI. FAILURE TO MAKE APPROPRIATE 4-HOUR NOTIFICATIONS TO THE NRC OPERATIONS CENTER.

VII. FAILURE TO DEVELOP OR IMPLEMENT NCS PROCEDURES AND POLICIES .

WESTINGHOUSE ELECTRIC CORPORATION
COMMERCIAL NUCLEAR FUEL DIVISION
COLUMBIA, SC FUEL FABRICATION FACILITY

SNM-1107/70-1151

PRESENTATION TO THE
U. S. NUCLEAR REGULATORY COMMISSION

PREDECISIONAL ENFORCEMENT CONFERENCE
REGARDING
NRC INSPECTION REPORT NO. 70-1151/97-205

October 29, 1997

AGENDA

Introductory Remarks	J. B. Allen
Safety Significance of Events	W CFFF Plant Mgr.
W Response to NRC's Findings of Apparent Violations	
Root Cause Determinations	
Regulatory Process Review Team Findings	
Comprehensive and Effective Corrective Actions	
Self-Identification Aspects	
Mitigation Factors and Discretionary Considerations	
Summary and Conclusions	

INTRODUCTORY REMARKS

Westinghouse Electric Corporation (W) Is Here to Discuss Our Actions in Response to Incidents Involving Loss of Volume Control for a Pellet Line Granulator Hopper and the Pellet Area Ventilation System Moisture Dropout Tanks, and the Apparent Violations Resulting From the NRC Staff's Inspection of these Two Incidents.

- *NRC IR No. 70-1151/97-205 Documents the NRC's Current Perspective of the Two Incidents and Seven Apparent Violations, Which We Will Address.*

- *Our Overall Understanding of the Incidents, Including Their Safety Significance, Our Response to the Apparent Violations, Our Investigations, Root Cause Determinations and Corrective Actions Are Addressed in Our Presentation.*

INTRODUCTORY REMARKS

- *First, to Place the Two Incidents in Proper Perspective, Double Contingency Protection Existed, In Reality, at All Times at CFFF:*
  - *That is: At All Times, Safety was Assured in That Criticality Could Not Occur Without at Least Two Independent, Concurrent, Unlikely Process Upsets.*
- *W Understands the Seriousness of the Current Enforcement Action and the Importance of Maintaining Safety at CFFF, and Complying with NRC Regulations, Conditions of Our License, and Our Commitments to the NRC.*

INTRODUCTORY REMARKS

Regarding the Incidents, W Also Understands:

- *The Need to Ensure That As-Built or Installed Geometry and Volume Criticality Safety Controls Used at CFFF Match the Assumptions in Our Design Documents, Including Required Verifications and Updates.*

- *Management's Overall Responsibility for Compliance with CFFF Nuclear Criticality Safety License Conditions and Applicable Regulatory Requirements.*

- *Our Obligation to Promptly Notify the NRC - in Accordance with Our License Commitments - when a Notifiable Incident Occurs, and to Promptly Investigate and Take Comprehensive and Effective Corrective Actions in Response to All Incidents, Whether Notifiable or Not.*

- *The Need for Strengthening and Maintaining Active Management Oversight and Involvement in CFFF Regulatory Process Compliance, Especially in the Area of Nuclear Criticality Safety Processes.*

INTRODUCTORY REMARKS

In Response to the Two Incidents, W CFFF Has:

- *Formed a Regulatory Process Review Team, Facilitated by the CFFF Plant Manager, to Review Regulatory Processes at CFFF, with Initial Focus on the Nuclear Criticality Safety Regulatory Process;*

- *Undertaken Investigations and Performed Structured Root Cause Analyses of the Two Incidents; and*

- *Implemented Comprehensive Corrective Actions to Address the Specific Incidents and Apparent Violations, and to Prevent Programmatic Recurrence.*

INTRODUCTORY REMARKS

***W* Remains Strongly Committed to:**

- *The Health & Safety of the Public and CFFF Employees*
- *Protection of the Environment*
- *Total Quality Management*
- *Compliance with NRC Regulatory Requirements, License Conditions and Our Commitments Made to the NRC*
- *Active Management Oversight and Control Concerning All Aspects of CFFF Operations*
- *Open Communications with NRC Staff, Including:*
  - *Required Incident Notifications and Safety Reports*
  - *Timely Communication of Other Relevant/Appropriate Issues.*

SAFETY SIGNIFICANCE OF EVENTS

At No Time Was Health or Safety Compromised for the Public, CFFF Employees or the Environment.

Despite the Occurrence of the Two Incidents and Deficiencies in Criticality Safety Evaluations (CSEs), Double Contingency Protection Did, In Reality, Exist At All Times.

- ***The Incidents and Subsequent Investigations and Management Evaluations Did, However, Identify Certain Aspects of the CFFF Nuclear Criticality Safety Program Which Could, If Not Corrected, Have a Potential for Safety Significance in the Future.***

RESPONSE TO NRC'S FINDINGS OF APPARENT VIOLATIONS

NRC Inspection Report No. 70-1151/97-205, Dated October 2, 1997, Documents the NRC's Findings of Seven Apparent Violations, Summarized As Follows:

1. *Inadequate incident Investigations*
2. *Failure to Conduct Adequate Criticality Safety Evaluations (CSE's)*
3. *Failure to Functionally Verify That Safety-Significant Controls Were Installed to Match Design Safety Criteria*
4. *Failure to Update CSEs to Assure All Assumptions Are Justified, Documented, and Independently Reviewed*
5. *Failure to Maintain and Control Nuclear Criticality Safety Records in Accordance with Written Procedures*
6. *Failure to Provide 4-Hour Notification to the NRC Operations Center*
7. *Failure to Develop or Implement Nuclear Criticality Safety Policies and Procedures That Identify Requirements for Implementation of NRC Regulations and License Conditions.*

W RESPONSE TO NRC'S FINDINGS OF APPARENT VIOLATIONS

- *W Acknowledges Certain Aspects of the NRC's Statement of Apparent Violation That the Initial Root Cause Incident Investigation and the Initial Corrective Actions for the Granulator Hopper Loss of Mass Contingency Were Not Adequately Implemented (Apparent Violation 97-205-01a & b) in That :*
  - *The CFFF Incident Review Committee Did Not React Beyond the Operational Aspects of the Incident; and*
  - *In-Depth Corrective Actions, Not Related to Re-Establishing System Safety, to Address Programmatic Issues Were Not Identified and Taken in a Timely Manner.*
- *W Generally Agrees with the NRC's Statement of Apparent Violations Concerning the Adequacy of the Referenced CSE's, Including Performing Functional Verifications and Updates (Apparent Violations 97-205-02, 03, & 04).*

W RESPONSE TO NRC'S FINDINGS OF APPARENT VIOLATIONS

W Acknowledges Certain Aspects of the NRC's Statement of Apparent Violation Concerning the Adequacy of the Control of Nuclear Criticality Safety Records in Accordance with Written Procedures (Apparent Violation 97-205-05) in That:

- The CFFF Records Maintenance Procedure CA-004, Although Covering Nuclear Criticality Safety Records, Did Not Include Sufficiently Detailed Guidance with Respect to Such Records; and
- Although Nuclear Criticality Safety Records are Maintained per the CFFF Records Maintenance Procedure, Enhancements are Needed to Enable Personnel to Readily Retrieve Such Records.

- W Also Acknowledges That, As Set Forth in the NRC's Statement of Apparent Violation, The Identified Aspects of Applicable NRC Regulations and CFFF License Conditions Were Not Included As Requirements for Implementation in Nuclear Criticality Safety Policies and Procedures (Apparent Violation 97-205-07):

  - W Nonetheless Believes That Our Nuclear Criticality Safety Policies and Procedures, As Implemented by CFFF Personnel, Are Adequate to Assure Plant Safety.

W RESPONSE TO NRC'S FINDINGS OF APPARENT VIOLATIONS

W's Indicated Position on These Apparent Violations is Confirmed by the Findings of the CFFF Regulatory Process Review Team.

The Review Team's Observations and Recommendations That Have Led to the Resulting Corrective Actions Completed to Date, or That Are Underway or Planned, Should be Considered by the NRC in Its Enforcement Decision.

W RESPONSE TO NRC'S FINDINGS OF APPARENT VIOLATIONS

The NRC's Statement of Apparent Violation Concerning the Fact That W Did Not Determine Root Causes and Take Corrective Actions for the Pellet Area Ventilation System Moisture Drop-Out Tanks Unanalyzed Condition Prior to Restart (Apparent Violation 97-205-01c) is Not Appropriate in That:

- *It Is Acceptable to Conduct Root Cause Investigations and Complete Implementation of Corrective Actions, Beyond Those Required to Re-Establish System Safety, After Restart:*
  - *W's Nuclear Criticality Safety Engineers Confirmed and Verified That the Component Could be Operated Safely in That Double Contingency Protection, In Reality, Existed. This Was the Basis for System Restart.*
  - *W is Not Aware of Any Regulatory Requirement, Nor is There a CFFF License Condition That Supports the Apparent Violation.*
  - *The Apparent Violation is Inconsistent with Recent NRC Generic Guidance That Allows 10 CFR Part 50 Licensees to Restart Their Plants and Continue to Operate Under Safety-Based Justifications of Continued Operation (See Generic Letter 91-018, Rev. 1, October 8, 1997).*

- *For Clarification, W Notes That It Shut Down Pellet Lines on 8/29/97 Due to the Interpretational Differences On This Issue with the NRC Inspectors.*

W RESPONSE TO NRC'S FINDINGS OF APPARENT VIOLATIONS

W Does Not Concur with the NRC's Statement of Apparent Violation That It Did Not Notify the NRC Within 4-Hours of Identifying the Deficient CSE for the Pellet Area Ventilation System Moisture Drop-Out Tanks (Apparent Violation 97-205-06a) in That:

- *A Formal Notification Under License Section 3.7.3(b.3.), Which States 4-Hour Notification Be Provided For: "Any Determination That a Criticality Safety Analysis or Evaluation Was Deficient AND That Double Contingency Protection, In Fact, Does Not Exist," Was Not Required Because W Determined That Double Contingency Protection Existed In Fact.*

- *Westinghouse Interprets This License Condition to Mean That Both Elements of Section 3.7.3(b.3.) Must Actually Exist Before a Notification is Required.*

W RESPONSE ON NRC'S FINDINGS OF APPARENT VIOLATIONS

Further, the NRC's Discussion of This Apparent Violation in the Inspection Report Improperly Refers to Bulletin 91-01 Criteria That Have Been Superseded By W's Renewed License Conditions:

- ***The Incident Notification Commitments in Section 3.7.3 Were Included Only After the NRC Accepted W's Revised Bulletin 91-01 Response Which Stated That the Attachment Thereto Containing the Identical Commitments was in Lieu of Previous Bulletin 91-01 Commitments (See W Letter, NRC-96-038, August 14, 1996, NRC Letter, October 30, 1996).***

- ***The NRC's Acceptance Letter Specifically Acknowledged That W's "August 14 Letter and Its Attachment Supersedes All Previous Commitments Made Pertaining to NRC Notifications Made In Accordance with the Bulletin." (NRC Letter, October 30, 1996).***

W RESPONSE ON NRC'S FINDINGS OF APPARENT VIOLATIONS

W Also Does Not Concur with the NRC's Statement of Apparent Violation That It Did Not Notify the NRC within 4-Hours of Identifying the Deficient CSE for the Pellet Line Granulator Hopper Incident (Apparent Violation 97-205-06b) in That:

- W, in Fact, Notified the NRC Pursuant to Section 3.7.3(b.2) within 4-Hours of the Time That the Regulatory Engineer Actually Concluded That The Double Contingency Controls, Documented in the System Safety Analysis, Were Not in Place.

- W Recognizes That Interpretational Differences Exist on the Meaning and Intent of the Section 3.7.3 License Condition.

ROOT CAUSE DETERMINATIONS

***W** Conducted Investigations and Root Cause Analyses of Each Incident :*

- *Pellet Line Granulator Hopper Root Cause Analysis Team Established June 25, 1997; RCA Report Approved August 5, 1997.*
- *Pellet Area Ventilation System Moisture Drop-Out Tanks Root Cause Analysis Team Established September 4, 1997; RCA Report Approved October 7, 1997.*
- *Structured Root Cause Analysis Methodology Employed with Trained Investigation Team in Accordance with CFFF Established Procedure and Process.*
- *Each Team Developed a Scenario-Time-Line and Identified Specific Causal Factors and Responsive Corrective Actions (Certain Elements of the Granulator Hopper Investigation and Corrective Actions Were Not Identified and Implemented in a Timely Fashion.)*

ROOT CAUSE DETERMINATIONS

Based on the Combined Findings of the Initial Investigations, the CFFF Incident Review Committee, in Accordance with Procedure RA-111, Recommended That a Regulatory Process Review Team Be Established to Examine CFFF Regulatory Processes, with Initial Focus on the Nuclear Criticality Safety Process.

- *The Team was Formed By the CFFF Plant Manager on 9/24/97.*
- *The Team Included the Regulatory Engineering and Operations Manager, the Acting Chemical Process Engineering Manager, the Plant Systems Engineering Manager and Three Senior Regulatory Affairs Engineers, and was Facilitated by the CFFF Plant Manager.*

CFFF REGULATORY PROCESS REVIEW TEAM FINDINGS

The Team Conducted A Comprehensive Review and Evaluation of the Effectiveness of the CFFF Regulatory Process and Included in Its Review Information, Requirements, Conditions and Commitments Contained In:

- *August 1992 NRC Staff Operational Safety Assessment, and Subsequent CFFF Response*
- *SNM-1107 License Application/License*
- *NRC Staff Safety Evaluation Report on SNM-1107 License Application*
- *NRC Staff's Subsequent Requests for Additional Information (RAI's)*
- *NRC Staff Inspection Reports for 1996 and 1997, and Subsequent CFFF Responses*
- *Pellet Line Granulator Hopper Root Cause Analysis Report*
- *Pellet Area Ventilation System Moisture Dropout Tanks Root Cause Analysis Report*
- *EA 97-244 (Loss of Current Knowledge of Location of Fuel Rods) Enforcement Conference and NOV Documentation Package*
- *History of Active and Completed Actions of the CFFF Safety Margin Improvement Program (SMIP).*

CFFF REGULATORY PROCESS REVIEW TEAM FINDINGS

Specific to Nuclear Criticality Safety, the Team Identified Programmatic Root Causes Relevant to the Two Incidents That Are the Subject of This Enforcement Action:

- *Regulatory Engineering Activities Were Not Implemented in a Disciplined, Timely and Well Documented Manner For Certain Nuclear Criticality Safety Regulatory Program Areas (I.E., Administrative and Documentation Requirements for CSEs).*

- *These Issues Were Not Identified in a Timely Manner By the CFFF Self Assessment Process.*

- *Management Oversight and Review Activities Did Not Identify and Elevate These Issues to Produce Corrective Actions on A Programmatic Basis.*

CFFF REGULATORY PROCESS REVIEW TEAM FINDINGS

Based on These Identified Root Causes, the Review Team Concluded That There Was a Need to Take Corrective Actions to Address Certain Administrative and Documentation Compliance Issues in the Following Nuclear Criticality Safety Program Areas:

- *Design Safety Basis*
- *Management of Change*
- *Compliance Quality Assurance*
- *Procedures (+ Criticality Safety Handbook)*
- *Documentation/Recordkeeping*
- *Incident Evaluation/Notification*
- *Management Oversight and Control*

- *The Review Team Confirmed the Comprehensiveness of Its Findings Based, in Part, on the Correlation of Its Findings with NRC IR No. 70-1151/97-205.*

- *The Team Also Determined That the Nature of the Compliance Issues to Be Addressed Do Not Adversely Affect Plant Safety.*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS

Areas Identified by the CFFF Regulatory Process Evaluation Review Team Requiring Corrective Actions Are Responsive to and Address the Apparent Violations Identified By the NRC.

Corrective Actions Taken Address Both Immediate and Lasting Corrective Actions and Together Constitute a Comprehensive Corrective Action Plan to Address These Issues and Potential Nuclear Criticality Safety (NCS) Issues with Similar Root Causes.

- *A Status of Our Actions to Date is Also Provided.*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - IMMEDIATE

Apparent Violation 97-205-01 - Incident Investigations:

Procedure RA-111, "Safety Significant Incident Investigations" Is Being Revised to Add:

- *Criteria on Timeliness of RCA Activities and for Prioritizing Recommendations and Implementing Corrective Actions*
- *Guidance to RCA Teams to Consider Management Control and Regulatory Processes in Their Deliberations*
- *Requirement that RCA Teams Be Chartered with Specific Management Instructions to Ensure That All of the Potential Root Causes Are Addressed, Including the Need to Comply with License Conditions*
- *Guidance on Event Recovery and Restart Authority.*

■ *Revised Procedure to Be Approved and Fully Implemented and Personnel Trained By 11/15/97.*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - IMMEDIATE

- *Apparent Violation 97-205-02 - Conduct of Adequate Criticality Safety Evaluations:*

  - *Pellet Line Granulator Hopper CSE and Pellet Ventilation System Moisture Drop-Out Tank CSE Were Updated to Meet License Commitments.*

- *Procedure RA-104, "Regulatory Review of Configuration Change Authorizations," Was Revised and Implemented to Ensure:*

  - *Field Verifications of Identified Controls, Equipment, Etc.*
  - *Adequate Reviews of Changes*
  - *Applicable Drawings to Be Signed Off Are Identified During the Review Process*
  - *Safety Significant Controls That Require Preventive Maintenance Are Specified During the Review Process*
  - *Applicable Safety Significant Controls Are Identified and Placed in Procedure RA-108, "Safety Significant Interlocks."*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - IMMEDIATE

pparent Violation 97-205-02 - Conduct of Adequate Criticality afety Evaluations:

Training to the Revised Procedure Was Performed and Documented for Those Individuals Involved with Reviewing Changes and to Emphasize the Importance of Following Procedures.

- *Comprehensive Training for CFFF Nuclear Criticality Engineers in the Preparation and Revision of CSEs is in Progress and Will Be Completed No Later Than 11/15/97.*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - IMMEDIATE

Apparent Violation 97-205-02 - Conduct of Adequate Criticality Safety Evaluations:

A Comprehensive, Facility-Wide Field-Verification of Plant Equipment is On-Going to Demonstrate That the As-Exists Geometry and Volume Criticality Safety Controls Used in the Facility Match the Assumptions in CFFF Design Documents. There are Three Components of This Major Effort:

- *Field Verifications to Compare Process Drawings and Drawing Measurements to As-Built or Installed Equipment and to Confirm All Existing Equipment is Reflected on Drawings.*
- *File Verification of Systems' Documentation to Confirm Analyses Exist for Equipment.*
- *Process Hazards Analyses of Plant Ventilation Systems, Focusing on Nuclear Criticality Safety*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - IMMEDIATE

Apparent Violation 97-205-02 - Conduct of Adequate Criticality Safety Evaluations:

These Actions Are Being Performed on An Accelerated Basis and Are Scheduled for Completion by 12/15/97:

- *The Status of Findings to Date Confirms Confidence in the CFFF Plant Safety Margin.*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - IMMEDIATE

Apparent Violation 97-205-03 - Functional Verification of Safety Significant Controls:

Volume of Pellet Line Granulator Hoppers and Pellet Ventilation System Moisture Drop-Out Tanks Were Field-Verified.

- *Procedure RA-104, "Regulatory Review of Configuration Change Authorizations," Revised and Personnel Trained.*
- *Training Planned for Nuclear Criticality Engineers in CSE Preparation and Revision By 11/15/97.*
- *Comprehensive, Plant-Wide Field Verification Instituted.*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - IMMEDIATE

pparent Violation 97-205-04 - Criticality Safety Evaluation Updates:

Procedure RA-104, "Regulatory Review of Configuration Change Authorization," Revised and Personnel Trained.

Training Planned for Nuclear Criticality Engineers in CSE Preparation and Revision By 11/15/97.

- *Comprehensive, Plant-Wide Field Verification Instituted.*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - IMMEDIATE

- Apparent Violation 97-205-05 - Nuclear Criticality Safety Records:

  Procedure CA-004, "Columbia Plant Records Management Policy" Is Being Revised to Enhance:

  - Guidance/Requirements for the Maintenance and Control of Nuclear Criticality Safety Documents
  - Requirements for the Storage of and Access to Nuclear Criticality Safety Documents.

- Procedure to Be Approved and Fully Implemented and Personnel Trained by 11/30/97.

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - IMMEDIATE

Apparent Violation 97-205-06 - Notification Requirements:

Although W, Does Not Believe That a Violation of License Notification Requirements Occurred, Given the Differences in Understanding Between W and the NRC Regarding This Issue, W Has Requested That a Management Meeting Be Scheduled With NMSS to Resolve This and Other Interpretational Issues.

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - IMMEDIATE

Apparent Violation 97-205-07 - Nuclear Criticality Safety Polices and Procedures to Identify Requirements for Implementation of NRC Regulations and License Conditions:

An Extensive Review of Section 6.0 of SNM-1107 Was Performed and Applicable Program Elements Were Incorporated into New or Revised Draft Procedures.

- *All NRC Cited Procedural Deficiencies Were Addressed Through Procedure Revisions.*
- *All New and Revised Procedures Will Be Approved and Fully Implemented and Personnel Trained By 12/31/97.*
- *CSE Guidelines Which Are Included As a Subset of "CFFF Baseline Integrated Safety Assessment Guidelines" Were Prepared and Formalized; the Guidelines Will Be Approved by 11/15/97.*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - IMMEDIATE

In Addition to the Actions Taken for Each Specific Apparent Violation, the Following Management Oversight and Control Initiatives Were Completed:

CFFF Plant Manager Directly Interfaced with Regulatory Management, and Established the Regulatory Process Review Team.

- *Regulatory Compliance Issues and the Importance of Regulatory Compliance Were Stressed at Plant Manager's All Employee, Production, Staff and Roundtable Meetings.*

- *Certain of These Issues Were Discussed By Division VP and Columbia Plant Manager During Recent Meetings with Both NRC Region II and Headquarters Management.*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - LASTING

For Lasting Corrective Actions, We Have Established New Initiatives or Made Enhancements to Existing Initiatives Under Our Safety Margin Improvement Program (SMIP) to Address the Apparent Violations and Improve the Processes to Which the Apparent Violations Relate.

A Finalized Plan and Schedule for Lasting Corrective Actions Will Be Completed Before 12/15/97.

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - LASTING

pparent Violation 97-205-01 and 97-205-06 - Incident vestigations and Notification Requirements:

CFFF Will Enhance the Incident Management and Notification Process to Clearly Define Evaluation, Notification and Post Incident Recovery Phases.

- *The RCA Process Will Be Restructured to Ensure That Broader Implications of Incident Investigations (Beyond the "On-the-Floor" Aspects of the Incident) are Considered.*
- *Documentation of the Incident Management Process Will Be Enhanced to Reflect the Format of the Emergency Plan Process.*
- *CFFF Intends to Meet with the NRC Staff on Incident Notification Criteria in Our License.*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - LASTING

pparent Violation 97-205-02, 03 & 04 - Conduct of Adequate riticality Safety Evaluation (CSE) Processes:

To Enhance Interim Design Safety Basis of CFFF Systems and Components, all CSAs and CSEs and Supporting Documentation Were Collected and Are Being Indexed. The Information is Being Assessed for Compliance to License Commitments.

- *Where Necessary Criticality Safety Analyses (CSAs) and Criticality Safety Evaluations (CSEs) Will Be Upgraded to Comply with License Commitments.*

- *After the Design Basis Documents Are Assembled and Updated, They Will Be Incorporated into the Integrated Safety Assessments (ISA's) on A System by System Basis to Establish the Final Design Safety Basis.*

- *In Addition to the CFFF Procedures Currently Being Revised to Address the Change Control Process, A More Comprehensive Review Will Be Undertaken to Enhance Management of Change.*

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - LASTING

pparent Violation 97-205-05 - Nuclear Criticality Safety Records:

In Addition to the Immediate Revision to the CFFF Records Management Procedures, Including the Assembly of Design Basis Documents into A Central Location, Recordkeeping and Document Control Practices Will Be Further Enhanced for Prompt Retrieval.

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - LASTING

pparent Violation 97-205-07 - Nuclear Criticality Safety Policies nd Procedures to Identify Requirements for Implementation of RC Regulations and License Conditions:

Building Upon the Review of Section 6.0 of SNM-1107 and Incorporation of License Requirements into New or Revised Procedures, Described as Part of Our Immediate Corrective Actions, This Process Will Be Undertaken for the Remainder of the License to Ensure License Requirements are Effectively Translated into Administrative and Operating Procedures. A Compliance Quality Assurance Element Will Be a Part of This Effort.

COMPREHENSIVE AND EFFECTIVE CORRECTIVE ACTIONS - LASTING

In Addition to the Lasting Actions Taken/Planned for Each Specific Apparent Violation, Additional Management Oversight and Control Initiatives Are Underway:

CFFF Plant Manager Will Continue to Direct the Regulatory Process Review Team

- *Management Oversight Tools Will Be Employed to Track Acceptable Performance to Regulatory Commitments*
  - *Enhanced SMIP and Commitment Tracking of Regulatory Requirements*
  - *Communications to Plant Personnel, E.G., Roundtable, Production and Plant Staff Meetings*
  - *Refocus of Regulatory Compliance Committee and Use of Corrective Action Committee Methodology.*

SELF IDENTIFICATION ASPECTS

CFFF Personnel Self-Identified the Loss of Volume Control for the Pellet Line Granulator Hopper, and Notified NRC Staff of the Incident (an "Event" As Defined in the NRC's Enforcement Policy) on 6/23/97.

CFFF Personnel Self-Identified the Loss of Volume Control for the Pellet Ventilation System Moisture Dropout Tanks, and Informed NRC Staff of the Event on 8/28/97.

SELF IDENTIFICATION ASPECTS

Notwithstanding These Self-Identification Aspects, There Were Missed Opportunities for Earlier Identification of the Programmatic Aspects of the Apparent Violations:

- *CSA/CSE Update Program and Summary Submittals to NRC Were Performed without Sufficient Thoroughness.*
- *NCS Field Verifications for CFFF Systems Modifications Were Not Systematically Performed.*
- *There Was Insufficient Programmatic Follow-Up to CFFF Reviews and Responses to NRC Nuclear Criticality Safety Inspection 96-204.*
- *W Did Not Complete the Investigation of and Corrective Actions for the Pellet Line Granulator Hopper Incident in a Timely Manner.*
- *Issues Related to Management Oversight of MC&A Area Identified in Response to NRC IR 97-203 (Loss of Current Knowledge of Location of Fuel Rods) Provided Notice That Similar Issues/Trends Could Exist in the Nuclear Criticality Safety Program.*

- *However, Once Both Events Were Identified By CFFF Personnel, CFFF Management Proactively Instituted Extensive Investigations and Evaluations to Respond to the Broader Implications of the Events.*

MITIGATION FACTORS AND DISCRETIONARY CONSIDERATIONS

Violation Severity Level/Penalty Assessment Factors

Based on the NRC's Enforcement Policy (NUREG-1600, As Amended), the Collective Violations Should Be No Greater Than Severity Level III AND Civil Penalty Mitigation is Warranted:

- **Self-Identification Credit is Warranted Based On the Extensive Efforts Expended By CFFF Management After Identifying the Incidents in Determining Underlying Root Causes and Programmatic Corrective Action Needs.**
- **Credit is Also Warranted for CFFF's Prompt and Comprehensive Corrective Actions:**
  - **CFFF Upper Management Immediately Responded When Notified By Appointing Investigatory Teams to Ensure Effective Investigations, Programmatic Root Cause Determinations and Comprehensive Corrective Actions.**
  - **Immediate and Lasting Comprehensive Corrective Actions Have Been Taken or Are Underway to Prevent Recurrence of the Incidents and the Occurrence of Incidents That Could Have Similar Root Causes.**

MITIGATION FACTORS AND DISCRETIONARY CONSIDERATIONS

The Use of Enforcement Discretion is Appropriate

The Incidents Received Attention at the Highest Levels of ESBU (Energy Systems Business Unit) Management.

The Violations Although Significant From a Regulatory Compliance Perspective, At No Time Compromised the Health or Safety of the Public, CFFF Employees or the Environment; and Double Contingency Protection Existed At All Times.

- *CFFF is A Safe Plant and Currently Has in Place Effective Safety Programs and Processes that Should Be Considered When Assessing the Violations. Agencies, Including the NRC, Have Endorsed the Industrial Hygiene, Safety, Environmental Protection, Chemical and Fire Safety Programs.*

MITIGATION FACTORS AND DISCRETIONARY CONSIDERATIONS

The Use of Enforcement Discretion is Appropriate

There Are Multi-Level, Proven Operational Conduct and Management Control Processes at CFFF to Ensure That Non-Compliances are Identified and Resolved In a Prompt, Effective and Safety-Conscious Manner. Recognized Tools Supporting These Processes are "Red Book" for Process Upsets, Process Hazards Analysis, Root Cause Analysis, Commitment Tracking and the Safety Margin Improvement Program.

- *W Has Committed Significant Resources and is Taking Comprehensive and Effective Corrective Actions to Prevent Recurrence of the Specific Apparent Violations and Similar Incidents.*

SUMMARY AND CONCLUSIONS

At No Time Was Safety Compromised for the Public, CFFF Employees or the Environment.

The Specific Apparent Violations and Their Significance to the CFFF Nuclear Criticality Safety Process Have Been Treated Very Seriously and Appropriate Management Oversight Has Been Taken, and Will Continue, to Prevent Recurrence.

- *W Is Responding, In a Full and Comprehensive Manner, to the NRC's Apparent Violations and the Findings of the CFFF Regulatory Process Review Team.*

- *W's Comprehensive Immediate and Lasting Correction Actions, and the Other Facts and Circumstances That We Have Presented Today, Support Consideration For the Use of Discretion By the NRC in Making Violation Severity Level and Civil Penalty Assessment Determinations.*