U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	70-7001
Inspection Report No:	70-7001/97003(DNMS)
Facility Operator:	United States Enrichment Corporation
Facility Name:	Paducah Gaseous Diffusion Plant
Location:	5600 Hobbs Road P. O. Box 1410 Paducah, KY 42001
Dates:	April 22, through June 2, 1997
Inspectors:	K. G. O'Brien, Senior Resident Inspector J. M. Jacobson, Resident Inspector
Approved By:	P. L. Hiland, Chief Fuel Cycle Branch

EXECUTIVE SUMMARY

United States Enrichment Corporation
Paducah Gaseous Diffusion Plant
NRC Inspection Report No. 70-7001/97003(DNMS)

Plant Operations

The plant staff's response to a small uranium hexafluoride out-gassing event highlighted the absence of specific guidance for the classification of and response to this type of event. During the event response, the plant staff implemented Technical Safety Requirement 1.6.4., "Outside of TSRs." (Section O1.1)

- The inspectors identified a Technical Safety Requirement violation during planned maintenance on the Building C-310 criticality accident alarm system. The violation appeared to result from plant staff's continued failure to recognize that both the enrichment cascade and product withdrawal Technical Safety Requirements applied to Building 310 activities. (Section O1.2)

- The plant staff identified several examples of individuals inappropriately entering into the exclusion areas required by the Technical Safety Requirement Action Statements for the criticality accident alarm systems. A Technical Safety Requirement violation was identified due to the apparent ineffective corrective actions as demonstrated by the number of recurring examples. (Section O1.3)

- Plant staff failed to identify the loss, for an hour and twenty-five minutes, of the Building C-310 criticality accident alarm system horns caused by a power supply system failure. A Technical Safety Requirement violation was identified for failure to implement the Technical Safety Requirement Action Statements during the period of inoperability. (Section O1.4)

- A Non-Cited Violation resulted when an operations manager alertly identified and took prompt corrective action for a sleeping Building C-315 operator. (Section O1.5)

Maintenance and Surveillance

- The inspectors identified a Technical Safety Requirement violation in that plant staff inappropriately utilized, since March 3, the Building C-360 scales to ensure that uranium hexafluoride-filled cylinders were within prescribed weight limits prior to heating the cylinders in the feed buildings. (Section M1.1)

- The inspectors identified a quality assurance program violation relative to the use of an inadequate procedure to perform post maintenance testing for certain criticality accident alarm systems. (Section M1.2)

Engineering

- Plant staff responded in a timely manner to address repeated actuations of the Building C-360 autoclave water inventory control safety system. However, the root cause for a related safety system equipment failure was not completely resolved until after the inspectors' review. (Section E1.1)

- The continued discovery of criticality accident alarm system detection modules with low background readings indicated that plant staff had not resolved an issue which led to a violation for inoperable criticality accident alarm systems. (Section E1.2)

- A Non-Cited Violation resulted when plant staff identified and took prompt action to correct the loss of a single specified criticality control. (Section E1.3)

- The inspectors identified a violation of the quality assurance program which involved the use of informal processes to implement and change some criticality controls and which contributed to recurring violations of established criticality controls in Building C-720. (Section E1.4)

Plant Support

- The inspectors identified that the plant staff used an informal approach to the performance of inspections after the identification of non-conforming conditions associated with the high-pressure fire water system. As a result, some existing problems were not identified, inadequate surveillance tests were performed, and additional out-of-service time was required to correct the errors. (Section F1.1)

DETAILS

I. Operations

O1. Conduct of Operations[1]

O1.1 Uranium Hexafluoride Release in Cascade Building C-337

a. Inspection Scope (88100)

The inspectors reviewed the plant staff's response to a small uranium hexafluoride (UF_6) release in Building C-337 and associated issues.

b. Observations and Findings

At 6:03 a.m., on May 5, the Building C-337 area control room (ACR) operators received a general alarm associated with cascade unit 2 cell 1. The general alarm originated as the result of a block valve buffer system flow alarm. The buffer system provided dry air to cascade components, including valves and expansion joints, through small diameter tubing. Buffer system pressures and flows were monitored to detect cascade component integrity breaches and to preclude either wet air leakage into or UF_6 outgassing from the cascade.

In response to the alarm, an operator was dispatched to the block valve buffer system panel located on the cell floor. The operator attempted to clear the alarm. However, during the process, "whiffs" of white smoke were observed flowing from the buffer flow alarm set knob. Releases of UF_6 were normally characterized by the presence of white smoke, a result of the hydrolyzation of the UF_6. In response to the smoke, the operator left the immediate area. A second operator, also responding to the alarm, observed the smoke. The second operator donned a respirator and took action to close two small valves, isolating the leak. The second operator then left the immediate area.

At 6:20 a.m., after exiting the cell floor release area, the operators informed the ACR manager of the small outgassing, and the operator's actions to isolate the leak. Based upon the release, the ACR manager directed that the cell floor be evacuated and notified the plant shift superintendent (PSS) of the event. At 6:35 a.m., the PSS requested an emergency squad response to the event.

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[1] Topical headings such as 01, MS, etc., are used in accordance with the NRC standardized inspection report outline contained in NRC Manual Chapter 0610. Individual reports are not expected to address all outline topics, and the topical headings are therefore not always sequential.

During the emergency squad response, which lasted until 8:35 a.m., the assistant PSS, acting as the incident commander (IC), directed several actions, including:

- At 6:55 a.m., the sheltering, in the ACR, of all building personnel;
- At 7:02 a.m., the cessation of Technical Safety Requirement (TSR) directed fire watches;
- The development and implementation of a hazardous materials emergency response safety plan;
- The monitoring and assessment of the ground and cell floor atmospheres for the presence of airborne UF_6 hydrolyzation products such as uranyl or hydrogen fluorides; and
- At 8:35 a.m., based upon negative sampling results, the re-entry and reuse of the building.

During the response and monitoring activities, plant staff, attired in protective equipment, confirmed that the second operator stopped the release and that no residual airborne UF_6 hydrolyzation products were present.

Following the event, the inspectors reviewed cascade operations alarm response and off-normal procedures relative to the event. The inspectors determined that the operators' actions were consistent with the instructions provided in the alarm response and off-normal procedures for a UF_6 release. The inspectors also noted that cascade operations procedure CA-3, "Operation of the Cascade Buffer Systems," recognized the potential for this type of release during trouble-shouting activities.

The inspectors also reviewed the local and site emergency plans and procedures. The inspectors determined that neither the emergency plans nor procedures provided specific guidance on either the classification of or appropriate response actions to small UF_6 releases. Instead, the plans and procedures appeared to focus on very large UF_6 releases. In addition, the event did not appear to meet the emergency plan criteria for designation as an emergency. Specifically, the event was a foreseeable and expected occurrence, as stated in procedure CA-3. Also, the release was easily controlled, at the time of release, by employees in the immediate area.

During discussions with some of the PSS staff, the inspectors were informed that generic hazardous material response training, provided to each IC, was the basis for the response actions directed during this event. Specifically, the implemented protective measures were based upon the absence of information available to the IC as to the duration of and airborne environment created by the release. The PSS staff also confirmed to the inspectors that the IC's response to small UF_6 releases was not specifically prescribed in off-normal or emergency procedures.

Finally, the inspectors noted that the IC's decision to implement TSR 1.6.4, "Conditions Outside TSR," was based upon a personal weighing of the perceived risks. Specifically, the IC stated that he considered the risk of an

uncontrolled fire, given the existing limited fire protection system impairments, to present a smaller risk than that created by conducting the required fire watches. The risk created by conducting the fire watches was primarily due to the IC's perception that the small UF_6 release created an unknown hazardous atmosphere. The inspectors also noted that the plant staff had not developed specific criteria or guidance for use of TSR 1.6.4.

The inspectors will perform a further review of the event and associated issues following submittal of the required 30 day report associated with the application of TSR 1.6.4.

c. Conclusions

The plant staff's response to a small UF_6 outgassing highlighted the absence of guidance to direct the IC's handling of this type of event. Specifically, policies and procedures had not been developed to define the proper response to or classification of small a UF_6 outgassing. In addition, criteria for application of TSR 1.6.4 had not been developed.

O1.2 Failure to Monitor Temperatures and Pressures of Cascade Cells (88100)

a. Inspection Scope

The inspectors reviewed the implementation of TSR requirements during a planned period of Building C-310 criticality accident alarm system (CAAS) inoperability.

b. Observations and Findings

On May 8, operations staff planned to remove from service the Building C-310 criticality accident alarm systems (CAASs) for scheduled maintenance work. The work included the replacement of some CAAS cluster detection modules and quarterly audibility ("horn") testing. The Building C-310 CAAS consisted of two clusters, G and H. Clusters G and H provided overlapping CAAS detection and alarm capability for Building C-310. Building C-310 contained 10 cascade cells, comprising the top and purge cascades, and the product withdrawal system. The product withdrawal system was used to compress, condense, and withdraw UF_6 from the cascade. Because Building C-310 contained cascade cells and the product withdrawal system, both TSR Sections 2.3, "Product and Tails Withdrawal Facilities," and 2.4, "Enrichment Cascade Facilities," applied to building operations. Technical Safety Requirements 2.3.4.7 and 2.4.4.2 both directed the actions Building C-310 operators were to take for inoperable CAAS systems. The language of the TSRs were similar; however, the Action Statements included differences due to the application to either cascade or withdrawal activities.

At 9:00 a.m., on May 8, the PSS declared cluster G inoperable for the planned maintenance work. At 10:20 a.m., the PSS also declared cluster H inoperable. Following this second action, Building C-310 was without CAAS coverage. As a part of this planned system outage, the building operators

entered the TSR 2.3.4.7a (detection) and TSR 2.3.4.7b (audibility) Limiting Condition for Operation (LCO) Action Statements. These TSRs related to the Building C-310 product withdrawal functions.

At 12:00 noon, during a tour of the buildings, the inspectors noted that the building operators had not entered the LCO Action Statements for TSRs 2.4.4.2a (detection) and TSR 2.4.4.2b (audibility). These TSRs related to building cascade functions. At the time of the inspectors' observation, several building cascade cells, containing greater than 700 grams of uranium-235 at an enrichment of 1.0 weight percent or greater, were being operated.

Procedure CP2-CO-CA1030, Revision 0, "OPERATION OF THE CRITICALITY ACCIDENT ALARM SYSTEM (CAAS)," dated March 3, 1997, provided instructions for loss of detection or alarm capability and for the routine operation of the CAAS. The procedure also implemented, in part, TSRs 2.3.4.7 and 2.4.4.2. Procedure step 6.2.1C required the operators to use the CAAS LCO monitoring sheet, CP-20578, for monitoring cell temperatures and pressures in cascade cells according to the TSR LCOs. At the time of the inspectors' tour, the building operators had neither monitored the Building C-310 cascade cell pressures and temperatures nor recorded the results on the specified form (CP-20578). The inspectors noted that the procedure was available on a desk in the control room; however, it was not in active use.

Action Statement A.1.2 of TSR 2.4.4.2b requires, in part, that the certificatee immediately begin to monitor temperatures and pressures in the cascade cells containing UF_6 enriched to 1.0 weight percent or greater hourly in areas where the maximum foreseeable absorbed dose in free air exceeds 12 rad when the area does not have an audible criticality accident alarm. (The requirement for hourly monitoring was to assure that the UF_6 remained in a gaseous state, thereby significantly reducing the likelihood of a criticality event.) Safety Analysis Report (SAR), Chapter 4, Appendix A, Table 2.5-1, "Criticality Clusters and Building Alarms," specified that clusters G and H provided the audible criticality accident alarms for Building C-310. The failure to immediately begin to monitor temperatures and pressures in the Building C-310 cascade cells when the area was without an audible criticality accident alarm is a Violation (VIO 70-7001/97003-01).

Once the inspectors identified the requirement for monitoring cascade cell pressures and temperatures, the operators immediately initiated rounds to monitor the parameters. The first set of monitoring results did not indicate any parameters outside the vapor (gaseous) phase of the UF_6 phase diagram.

In a follow-up review, plant staff identified that clusters G and H were removed from service on April 28. However, no documentation was available to indicate that TSR 2.4.4.2b, Action Statement A.1.2 was performed. The inspectors also noted that the Department of Energy had issued a violation in Inspection Report 97-01 for previous failures to implement a similar Operational Safety Requirement (OSR). The OSR

violation indicated that plant staff had not monitored cell temperatures and cascade line recorders during outages of the Building C-310 CAAS on November 27 and December 13, 1996.

Based on these occurrences, the inspectors determined that a continuing problem existed with recognition by plant staff that both TSR Sections 2.4 and 2.3, applied to Building C-310 operations.

c. Conclusions

The inspectors identified a violation of TSR LCO Action Statement requirements to monitor cascade cell temperatures and pressures upon removal of the Building C-310 CAAS system from service. The violation appeared to result from plant staff's continued failure to recognize that both the enrichment cascade and product withdrawal TSRs applied to Building C-310 activities.

O1.3 Criticality Accident Alarm Exclusion Area Boundary Control

a. Inspection Scope (88100)

The inspectors reviewed the circumstances surrounding several reports of personnel inappropriately crossing the exclusion area boundaries established for inoperable CAAS clusters or alarms.

b. Observations and Findings

During the inspection period, the plant staff identified that, on several occasions, individuals failed to observe the exclusion area boundaries established for inoperable CAAS clusters or alarms. Specifically, on April 28, four individuals, on three separate occasions, entered the exclusion area, delineated by traffic cones and postings, following removal from service of the Building C-310 CAAS clusters (G and H clusters). The individuals were not equipped with alarming dosimeters, nor had PSS or manager-in-charge (MIC) provided authorization to enter the exclusion area. The initial corrective action for these occurrences was to issue a bulletin and to hold management meetings. During the meetings, the plant staff was reminded of the requirements for entering an exclusion area.

On May 8, another individual crossed the exclusion area boundary without an alarming dosimeter or appropriate authorization when CAAS detection coverage for Building C-310 was unavailable. On May 14, two individuals, on two separate occasions, entered the Building C-337 exclusion area when the CAAS horns were unavailable. In each instance, the individual entered the exclusion area without the required alarming dosimeters or radios, and without authorization by the PSS or MIC. In each instance, the individuals either left or were escorted from the exclusion area upon discovery that they were in the area without the proper dosimetry or authorization.

Technical Safety Requirements 2.3.4.7 and 2.4.4.2, "CRITICALITY ACCIDENT ALARM SYSTEM," LCO Action Statements A.2.1, A.2.2, and A.3, require, for areas not covered by criticality accident detection or an audible alarm, that: 1) the area not covered by criticality accident detection be evacuated immediately; 2) access to the evacuated area be restricted; and, 3) personnel allowed into the area that would be restricted be provided with an alternate means of criticality alarm notification such as a device that will alarm on sensing a 10-millirem-per-hour dose rate or a radio (loss of audibility only).

Step 6.2.3B of Procedure CP2-CO-CA1030, Revision 0, "OPERATION OF THE CRITICALITY ACCIDENT ALARM SYSTEM (CAAS)," dated March 3, 1997, stated that upon loss of CAAS coverage: "Access control consists of posting signs, traffic cones, or other type barriers around the perimeter of the affected area that informs personnel of the LCO boundary and that access is not allowed unless authorized by the PSS or MIC and proper dosimetry (for detection and audibility) or a radio (for audibility only) is worn."

The failure of these seven individuals to obtain the proper dosimetry or radios and authorization from the PSS or MIC to enter into areas which had access restricted because of inoperable CAAS coverage is a Violation (VIO 70-7001/97003-02).

Although the plant staff identified the incidents which comprised the violation, the initial corrective actions were not effective at preventing recurrence of the violation on three additional occasions during the inspection period. As a result, the violation is being cited because the criteria for mitigation, consistent with Section VII.B.1 of the NRC Enforcement Policy, were not met.

c. Conclusions

Plant staff identified several examples of the violation of exclusion areas established to implement the CAAS TSR LCO Action Statements. However, the recurring nature of these violations, during the inspection period, indicated that the initial corrective actions were not effective.

O1.4 Building C-310 Criticality Accident Alarm System

a. Inspection Scope (88100)

The inspectors reviewed the loss of annunciator power to the Building C-310 control room and resultant inoperability of the building CAAS horns.

b. Observations and Findings

At 6:25 p.m., on May 18, the Building C-310 ACR operators noticed the loss of control room indicating and annunciator light power. The ACR indicating and annunciator lights were direct current (d.c.) systems normally

powered from a 480 volt alternating current (a.c.) circuit through a rectifier. The system also included a 250 volt battery bank as a backup power supply.

Following operator identification of the power loss, immediate action was taken to restore continuous monitoring of TSR-related parameters through the stationing of operators at local alarm panels. Efforts were also initiated to determine the cause for the d.c. power loss. As a part of this trouble-shooting effort, the operators checked the local d.c. power distribution panel, the a.c. to d.c. power rectifier panel, and the a.c. power supply circuit breaker. No problems were identified. Subsequently, the operators cycled the a.c. power circuit breaker in an attempt to either repower the system or to engaged the battery backup transfer switch. At 7:50 p.m., the operators were successful in repowering the system from the backup batteries.

On May 22, during planning efforts for system repairs, engineers discovered that the d.c. distribution system also provided control power for the CAAS building horn solenoids. Therefore, during the power outage experienced on May 18, the CAAS building horns were also inoperable. This inoperability was not realized at the time of the power outage.

During a subsequent review of the event, the inspectors determined that the Building C-310 ACR did not have alarm response procedures (ARPs) for loss of indicating or annunciator power. In addition, the staff indicated to the inspectors that the initial trouble-shooting was focused on restoring power, not on ensuring that full impact of the power outage was defined. As a result, operator reviews of the d.c. distribution panel, conducted shortly after the power loss, overlooked the impact of the loss of power to a breaker labeled, "Rad Alarms." Finally, the inspectors noted that materials developed to support transition of the plant to NRC oversight, documented CAAS reliance on d.c. power for the building horn solenoids. However, the plant staff did not refer to this information during the initial troubleshooting or repair efforts.

Technical Safety Requirements 2.3.4.7b and 2.4.4.2b require, in part, that areas without audible CAAS horns are evacuated, restricted, and that personnel entering the area are provided with an alternate means of criticality accident notification. During the period of d.c. power loss on May 18, the Building C-310 CAAS building horns were inoperable and the TSR-required compensatory measures were not implemented. This is a Violation (VIO 70-7001/97003-03).

Although the plant staff identified the failure to implement the TSR-required compensatory measures during a period of CAAS inoperability, previous corrective actions to address inadequate procedures and to identify support systems for safety-related components should have precluded operations outside the TSRs. As a result, the violation is being cited because the criteria for mitigation, consistent with Section VII.B.1 of the NRC Enforcement Policy, were not met.

c. Conclusions

A loss of Building C-310 ACR indicating and annunciator d.c. power resulted in the concurrent, but unrecognized, loss of CAAS building horns for one hour and twenty five minutes. As a result, TSR-required compensatory measures for inoperable CAAS horns were not implemented, a TSR violation.

O1.5 Inattentive Operator

a. Inspection Scope (88100)

The inspectors reviewed the circumstances surrounding and immediate corrective actions to an inattentive operator in Building C-315.

b. Observations and Findings

At 2:45 p.m., on April 18, an operations manager identified an operator asleep in the Building C-315 withdrawal room. The observation was made during a routine tour of the facility. At the time of the observation, ongoing withdrawal of liquid UF_6 tails material to storage cylinders was in progress. The sleeping operator was one of two operators assigned to the building in accordance with the TSRs. The second operator was in the building.

In response to the observation, the operations manager immediately sought the transfer of a qualified replacement operator to the building from another area of the site. Also, the sleeping operator was awakened and relieved of his duties.

Nuclear Regulatory Commission (NRC) Inspection Report 70/7001-97002 also discussed a violation for failure to meet TSR minimum staffing requirements. However, that violation involved a different building and different root causes. In addition, corrective actions to that violation could not have reasonably prevented the April 18 event.

Technical Safety Requirement 3.2.2.a, requires, in part, that minimum staffing for each building is as shown in TSR Table 3.2.2-1. Technical Safety Requirement Table 3.2.2-1 defines minimum staffing for Building C-315 during withdrawal operations as two operators. The failure to maintain staffing of Building C-315 is a Violation. However, this certificatee-identified and corrected violation is being treated as a Non-Cited Violation (NCV), consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 70-7001/97003-04).

c. Conclusions

An NCV resulted when an operations manager alertly identified and took prompt corrective action for a sleeping Building C-315 operator .

O8 Miscellaneous Matters

O8.1 Certificatee Event Reports (90712)

The certificatee made the following operations-related event reports during the inspection period. The inspectors reviewed any immediate safety concerns indicated at the time of the initial verbal notification. The inspectors will evaluate the associated written reports for each of these items following submittal.

Number	Status	Title
32212	Open	Building 360 Water Inventory Control System Actuation. (CER 70-7001/97003-05)
32224	Open	Slow Closing Containment Valves on Autoclave 1E. (CER 70-7001/97003-06)
32258	Open	Slow Closing of Containment Valves on Autoclaves 2N, 2S, and IW. (CER 70-7001/97003-07)
32274	Open	Use of Technical Safety Requirement 1.6.4 During Response to A Small Uranium Hexafluoride Outgassing. (CER 70-7001/97003-08)
32304	Closed	Minor spill of PCB-contaminated Oil Requiring Notification of State and Federal Authorities. The inspectors had no further questions. This item is closed. (CER 70-7001/97003-09)

II. Maintenance and Surveillance

M1. Conduct of Maintenance and Surveillance

M1.1 Use of Buildings 333A and 337A Scales

a. Inspection Scope (88102)

The inspectors reviewed plant staff's implementation of TSRs 2.2.4.4, "Cylinder Heating - Cylinder Accountability Weight," and 2.2.4.12, "Scales."

b. Observations and Findings

Technical Safety Requirements 2.2.4.4 and 2.2.4.12 require the plant staff to weigh all UF_6-filled cylinders, using the Buildings C-333A or C-337A scales, prior to heating the cylinders. The purpose of these TSRs was to preclude the heating of an overfilled cylinder. Heating of an overfilled cylinder could challenge cylinder integrity and feed facility autoclave safety systems.

Procedure CP4-CO-CN2045a, "Operation of the C-333A and C-337A Vaporizer Facilities," defined feed facility operations. The inspectors reviewed the procedure and noted that step 5.4 conditionally allowed cylinders to be heated, without being weighed in Buildings C-333A or C-337A, if a previous weighing had been conducted in Building C-360, the toll receipt and sampling building. This instruction appeared inconsistent with the TSR statements. Through discussions with feed facility building operators and managers, the inspectors determined that feed cylinders were not weighed in the feed facilities prior to heating. Instead, the Building C-360 cylinder weights were reviewed by the building operators to determine the acceptability of cylinder for heating. The inspectors noted that the scales in Buildings C-333A, C-337A, and C-360 were all controlled and calibrated under the same program and to the same level of accuracy. Therefore, the Buildings C-333A and C-337A operator actions did not appear to create an immediate safety issue.

On May 21, the inspectors communicated these observations to the PSS. In response, the PSS placed an immediate halt to all further heating of cylinders in Buildings C-333A and C-337A. The PSS also reviewed the current plant procedures and the TSRs for the weighing and heating of feed cylinders. The PSS concurred with the inspectors' findings that the current procedure was not in accordance with the TSR. The plant staff promptly processed a procedure change to correct the error. Subsequent feed cylinders heated in the C-333A and C-337A facilities during the inspection period complied with the TSRs.

The failure to weigh all UF_6-filled cylinders, using the Building C-333A or C-337A scales, prior to heating in the Building C-333A or C-337A autoclaves was a Violation (VIO 70-7001/97003-10).

At the time of the observations, the inspectors were aware that plant staff had submitted a proposed TSR change relative to the weighing of cylinders. The proposed change would allow the plant to use any of the calibrated scales to satisfy the weight verification requirement. However, as of the end of the inspection period, the NRC had not taken any action on the proposed TSR change.

c. Conclusions

The inspectors identified a TSR violation in that plant staff inappropriately utilized the Building C-360 scales to ensure that UF_6-filled cylinders were within prescribed weight limits prior to heating in the feed buildings. Because of the prompt and appropriate corrective action taken to assure compliance with the TSRs, a written response to this NRC-identified violation is not required.

M1.2 Inadequate Criticality Accident Alarm System Tests

a. Inspection Scope (88102)

The inspectors reviewed the methodology used to perform TSR-required quarterly surveillances and post maintenance tests of the process building CAAS horns.

b. Observations and Findings

On April 23, the inspectors noted that page 2-30 of Appendix A of Chapter 4 of the SAR described the building and slave building horns which provided an audible alarm signal upon initiation from the local [CAAS] cluster units. Safety Analysis Report, Chapter 4, Appendix A, Table 2.5-1, referenced on page 2-30, summarized the cluster unit locations and the building horns supported. Slave building horns were connected to a specific criticality cluster but were located in different buildings than the clusters. These horns were necessary to ensure that all personnel, within the area affected by a criticality event, were notified to evacuate the area.

The inspectors noted that Table 2.5-1 specified that: 1) Building C-333A clusters AA and AB would actuate horns in both Buildings C-333 and C-333A; 2) Building C-337A cluster N would actuate horns in Building C-337; and 3) Building C-337 clusters V and X would actuate a horn in Building C-337A. A review of the CAAS safety system drawings also indicated that the building horns were interconnected, although discrepancies concerning the exact ties between clusters and horns were noted between instrument drawings and electrical drawings.

The inspectors reviewed the procedure used to perform the TSR-required quarterly surveillance of the CAAS clusters and alarms for the process buildings. Step 8.10 of Procedure CP4-GP-IM6209, "CRITICALITY ACCIDENT ALARM SYSTEM FUNCTIONAL TESTS," dated April 14, 1997, required the test mechanic to: "Document proper operation of local cluster horns and building horns on [Form] CP-20735." Form CP-20735, which specified CAAS clusters for each building and the associated horns and beacons for testing, did not include Building C-333 horns for Building C-333A clusters AA and AB, or Building C-337 horns for Building C-337A cluster N, or the Building C-337A horn for Building C-337 clusters V and X. During discussions with the inspectors, plant staff stated that the CAAS slaved horns for Buildings C-333, C-333A, C-337, and C-337A, were not tested as part of the CAAS functional test for the quarterly surveillance or as part of post maintenance testing for the particular clusters. As a followup, the inspectors confirmed that none of the test procedure versions, used since March 3, included provisions to test the slaved horns.

Further review by the inspectors identified that post maintenance tests for the affected clusters and horns had been performed since the NRC assumed regulatory authority on March 3. Specifically, on April 5, 1997, clusters AA and AB in Building C-333A were tested for horn audibility, and on March 18,

1997, cluster N in Building C-337A was tested for horn audibility following entry into LCO 2.2.4.3b (inoperable CAAS audibility for feed facilities) to conduct maintenance on the clusters and the building horns. In addition, on March 4 and 31, 1997, cluster V in Building C-337 was tested for audibility following entry into LCO 2.4.4.2b (inoperable CAAS audibility in enrichment cascade facilities) to conduct maintenance on cluster V.

10 CFR 76.93, "Quality Assurance," requires, in part, that the certificatee shall establish and execute a quality assurance program. The Quality Assurance Program, Section 2.5, states, in part, that: 1) "Q" activities affecting safety or quality are prescribed and performed in accordance with documented instructions, procedures, or drawings of a type appropriate to the circumstances, and 2) these documents include or reference appropriate quantitative or qualitative acceptance criteria for determining that prescribed activities are satisfactorily performed. Safety Analysis Report, Section 3.15, "Q AND AQ STRUCTURES, SYSTEMS, AND COMPONENTS," specifies the criticality accident alarm system as a "Q" system, including building and slaved lights and horns for Buildings C-333, C-333A, C-337, and C-337A.

The plant staff's performance, from March 3 through April 23, 1997, of post- maintenance functional tests of the criticality accident alarm systems for Buildings C-333, C-333A, C-337, and C-337A , using a procedure which did not include appropriate acceptance criteria for determining that the prescribed activities were satisfactorily performed is a Violation of the quality assurance program (VIO 70-7001/97003-11). Specifically, Procedure CP4-GP-IM6209 did not include acceptance criteria to ensure that all of the slave horns associated with Buildings C-333, C333A, C-337, and C-337A CAAS clusters sounded following an actuation signal.

Following identification of the inadequate functional test procedure, the inspectors communicated the issue to the PSS. The PSS reviewed the issue and entered the LCO Action Statements for loss of CAAS audibility in the affected facilities. Subsequent to these actions, plant staff revised the procedure and conducted tests of all slave building horns. The tests documented that all of the slaved horns functioned in accordance with the SAR and TSR requirements.

c. Conclusions

The inspectors identified a violation of Section 2.5, "Procedures," of the Quality Assurance Program. Specifically, the plant staff used an inadequate procedure to perform post maintenance testing for certain criticality accident alarm systems. The procedure did not include sufficient acceptance criteria to demonstrate the operability of slaved horns associated with certain criticality accident alarm systems.

III. Engineering

E1. Conduct of Engineering

E1.1 Water Inventory Control System Actuations

a. Inspection Scope (88100)

The inspectors reviewed the status of an investigation into and corrective actions for two separate actuations of the water inventory control system (WICS) for autoclave number 1 in Building C-360.

b. Observations and Findings

On April 9, 1997, plant staff notified the NRC (Event Number 32128) that the WICS safety system for Building C-360 autoclave number 1 had actuated in response to a valid signal. On April 23, plant staff again notified the NRC (Event Number 32212) that the WICS for the same autoclave had actuated. The WICS safety system was designed to limit the amount of water in an autoclave by closing the steam supply and thermostatic vent line isolation valves. The WICS was actuated by ultrasonic probes sensing standing water in the autoclave drain line. Limiting the amount of water in the autoclaves ensured that the peak accident pressure, assumed in the SAR, was not exceeded. In addition, the WICS reduced the likelihood of a criticality, during the heating of cylinders containing enriched UF_6, by limiting the amount of available moderator.

The inspectors discussed the investigation into the actuations with the system engineers. The engineers indicated that there appeared to be several causes for the actuations. The causes included: 1) a design which allowed adjacent Building C-360 autoclaves to share common steam supply and drain lines instead of having separate lines, as in the C-333A and C-337A feed facilities; 2) the build-up of corrosion products on the wall of the drain lines (visible during boroscopic examination of the actual drain line); 3) the blocking of the drain line vent by a putty substance at some point in the past; and 4) the presence of sticking check valves in the drain line (The valves did not appear on any plant drawing.)

The inspectors noted that the plant staff took timely and reasonable corrective actions to resolve these problems. The corrective actions included: 1) administratively controlling entry into Mode 5 (cylinder heating) of the two autoclaves sharing common steam supply and drain lines; 2) cleaning the drain lines; 3) replacement of the check valves; and 4) reestablishing the drain-line vents. During the inspection period, no further actuations occurred after implementation of the corrective actions during Mode 5 operations.

The investigation also revealed that plant maintenance staff routinely set the ultrasonic probes for the WICS to the most sensitive setting when installing the probes. The high sensitivity setting could have been a cause of past

WICS actuations during periods when the steam supply to the autoclaves was shut off. In response, the system engineer modified a maintenance procedure to adjust the probe sensitivity to a point just beyond that which caused the probes to alarm during functional testing of the WICS with water, but to a point less than the maximum sensitivity level.

The inspectors also reviewed the corrective actions taken for the first reported WICS actuation when only one of two ultrasonic probes responded to water in the drain line. The system engineers indicated that the cause of the failure was fouling on the probe from contaminants in the steam over a period of time. The inspectors discussed preventive maintenance (PM) of the probes with maintenance staff. The maintenance mechanic indicated that a PM task to clean the probes was performed annually. However, the inspectors determined that the task was neither proceduralized nor specifically controlled. During followup discussions with plant staff, the inspectors determined that the probe cleaning was not being performed in accordance with the manufacturer's recommendations. The undocumented nature of the PM and the staff's failure to perform the PM in accordance with the manufacturer's recommendations could have contributed to the one probe not responding to the water in the drain. The inspectors raised these issues with engineering management. The PM manager confirmed the inspectors findings and took action to incorporate the correct instructions into a current procedure.

c. Conclusions

Plant staff responded in a timely manner to address repeat actuations of the Building C-360 WICS due to water in the number 1 autoclave. However, all facets of the first event were not addressed, in that, the root cause for the ultrasonic probe failure was not completely resolved.

E1.2 Criticality Accident Alarm Modules with Low Background Readings

a. Inspection Scope (88100)

The inspectors continued to monitor CAAS module background readings during building tours as well as abnormal readings reported by plant staff in problem reports.

b. Observations and Findings

During weekly checks, plant operators discovered CAAS clusters with one module (detector) having an electronically generated background reading below 9.5 millirem per hour on April 16 and 28 and May 12 and 28. As discussed in Sections O1.4 and M1.4 of NRC Inspection Report 70-7001/97002(DNMS), a background reading below 9.5 millirem per hour would reduce the radius of coverage for the module to less than the design radius specified in the SAR. The design radius was based upon an alarm set point of 10 millirem above background. A CAAS cluster was considered to be inoperable if two or more modules in a specific cluster had

background readings below 9.5 millirem per hour. At the current time, the CAAS systems did not include a trouble alarm associated with the low background readings. Therefore, the plant staff was not aware of the status of coverage in-between weekly checks.

None of the discoveries of CAAS modules with low background readings involved a cluster with two or more modules. As a result, no inoperable clusters were discovered. However, the continued discovery of modules with background readings below 9.5 millirem per hour, indicated that the radius of coverage assumed may not always be present between the weekly checks. Late in the inspection period, engineering staff submitted a modification package to the Plant Operations Review Committee (PORC) to change the set point for the low-reading trouble alarm for the CAAS modules. The PORC approved the modification package with some comments. The modification would ensure that a trouble alarm was received at the CAAS alarm panel before the cluster became inoperable. The inspectors will review the package and its implementation as followup to Violation 70-7001/97002-04.

c. Conclusions

The continued discovery of CAAS modules with background readings lower than the minimum required for full detector coverage indicated plant staff had not yet resolved the issue which led to a violation for inoperable CAAS clusters in NRC Inspection Report 70-7001/97002(DNMS).

E1.3 Building C-335 Sample Double-Batching Event

a. Inspection Scope (88020)

The inspectors reviewed the circumstances and corrective actions for the loss of one criticality safety control, an NRC Bulletin 91-01, 24-hour reportable event.

b. Observations and Findings

On April 29, plant environmental monitoring staff moved a batch of 12 sample containers, each 0.55 liters in volume, from Building C-335 to Building C-710, the plant laboratory. During a receipt review at Building C-710, laboratory staff determined that the batch size was in excess of that allowed under current criticality safety controls. Specifically, nuclear criticality safety approval (NCSA) GEN-08, "Transfer, Handling, and Storage of Fissile/Potentially Fissile Samples," dated July 16, 1996, limited the batch size to "no more than 5 containers, each being a maximum size of 1.1 liters..."

In response to the finding, the laboratory staff, with the assistance of nuclear criticality safety engineers, separated the containers into the proper batch size, instituted appropriate spacing requirements between the batches, and conducted analyses of the samples to determine the actual

concentration of fissile materials. The analysis results indicated that the potentially fissile samples contained negligible amounts of uranium-235, on the order of micrograms per liter of solids. The total amount of uranium-235 present was less than the 15-gram limit used to define the point at which materials required fissile material handling controls.

On May 2, the plant staff notified the NRC (Event Report Number 32264), in accordance with NRC Bulletin 91-01, that the batch limit for sample containers with potentially fissile solids was exceeded. The inspectors noted that the report was made within the 24 hour time frame specified in the Bulletin.

During followup reviews and discussions with plant management, the inspectors determined that all movement of potentially fissile material by the environmental monitoring group had been suspended. In addition, plant management had formed an investigation team to determine the appropriate long-term changes necessary to preclude recurrence of the event.

The failure to maintain the NCSA GEN-08 batch limit requirements is a Violation. However, this certificatee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 70/7001-97003-12).

c. Conclusions

A Non-Cited Violation resulted when plant staff identified and took prompt action to correct the loss of a criticality control specified in NCSA GEN-08.

E1.4 Implementation of Nuclear Criticality Safety Approval GEN-27

a. Inspection Scope (88020)

The inspectors reviewed the implementation of NCSA GEN-27 in Building C-720, the maintenance and stores building.

b. Observations and Findings

During the last quarter of 1996, plant management initiated a program to identify, evaluate, and document the criticality controls applied to process-related equipment which was not in service. The program scope was limited to equipment which: 1) had been exposed to process gas; and 2) was removed without the benefit of formal NCSA controls. Program activities included: 1) a walkdown of all uninstalled process-related equipment; 2) the conduct of nondestructive analyses; and 3) the tagging of all equipment. Criticality controls for the program were documented in NCSA GEN-27, "Handling and Storage of Legacy Process Equipment."

During February 1997, the GEN-27 project manager, nuclear criticality safety (NCS) staff, and Building C-720 management met to discuss the status of GEN-27 implementation. During the meeting, the project manager highlighted the large amount of equipment stored in Building C-720 which appeared to require control under GEN-27. The project manager also indicated that full implementation of GEN-27, in Building C-720, may not be possible due to: 1) the limited time remaining prior to transition to NRC authority; 2) spacing limitations; and 3) criticality accident alarm system coverage limitations.

On March 3, the NCS manager issued, to the GEN-27 program manager, an internal memorandum which documented NCS's position that: "GEN-27 does not apply to untagged equipment in [Building] C-720." The memorandum stated that previous reviews of Building C-720 activities and current practices precluded the need to apply GEN-27 to equipment stored in the building. Copies of the memorandum were issued to all NCS staff and the Building C-720 manager. As a direct result of the memorandum, all Building C-720 GEN-27 actions were considered complete.

On April 9, 1997 the NCS staff was requested to review the condition of a heat exchanger, located in Building C-720, which was thought to contain UF_6 deposits. During the review, NCS staff identified some other process-related equipment which appeared to have been exposed to process gas but was neither tagged nor controlled under an NCSA. On April 16, 1997, NCS staff performed a second review of the equipment and initiated a problem report to document the findings. The problem report also documented: 1) the continued acceptability of not applying GEN-27 to Building C-720; 2) instructions to suspend all work in the affected areas of Building C-720; and 3) a recommendation to revise to GEN-27 so as to minimize the impact when implemented in Building C-720.

On April 24, plant staff identified and documented, in a problem report, another example of equipment, stored in Building C-720, which was not controlled in accordance with an approved NCSA. Specifically, three valve subassemblies were identified, on a pallet in a staging area, which were neither labeled, tagged, nor posted. One of the valve subassemblies appeared to have uranium oxide deposited on the exterior surfaces. As an immediate response to the observation, the valve subassemblies were separated and the area was roped off. The NCS staff also recommended that the equipment be handled in accordance with GEN-27.

Following this second observation, the inspectors performed a walkdown of the valve subassemblies area and the remainder of Building C-720. The inspectors noted that many areas of the building contained process-related equipment which was not under NCSA controls. These observations were in addition to those previously documented by the NCS staff. The inspectors discussed the observations with building management and were informed that the equipment was controlled based upon a Building C-720 assessment. The building manager was not familiar with how the assessment related to the current NCSAs.

On April 28, two additional problem reports were filed to document concerns that: 1) the resolution to previous Building C-720 issues was not in accordance with current procedures; and 2) changes, required to remove Building C-720 from the scope of GEN-27, were not being implemented.

The inspectors discussed observations during tours of Building C-720 equipment storage areas and the problem reports filed on April 17, 24, and 28, with NCS management. During these discussions, the NCS manager indicated that each of the Building C-720 findings were handled in accordance with the applicable procedures. The manager also stated that GEN-27 did not apply to Building C-720. This latter statement was based upon previous NCS reviews of the building and management's mission statement for the building, which precluded the handling of contaminated equipment in Building C-720. The inspectors noted that non-application of GEN-27 to Building C-720 was either inconsistent with the NCSA or constituted a change to the NCSA, as approved by the Plant Operations Review Committee (PORC). In addition, the inspectors previous observations of equipment stored in the building and the problem reports clearly indicated that the building mission statement was not being followed.

Subsequent to these discussions, the inspectors further reviewed the status of process-related equipment storage activities with Building C-720 and plant management. During these discussions, the managers consistently indicated that Building C-720 was not covered by GEN-27 based upon the March 3, 1997, NCS memorandum. These individuals also stated their understanding that equipment, previously decontaminated or rebuilt, did not require NCSA controls, tagging, or posting. The inspectors noted that each of these positions was inconsistent with the current NCSAs including GEN-27.

On May 5, NCS staff further reviewed the status of Building C-720 equipment storage with building management. During these conversation, NCS staff revised previous directions given relative to the tagging and posting of some equipment and revised their position relative to the "applicability" of GEN-27 to equipment stored in Building C-720. The revised "applicability" position indicated that GEN-27 applied to all process-related equipment stored in the building, unless the equipment had never been exposed to process gas or was controlled under another NCSA. This position was consistent with the NCSA statements.

On May 6, the revised NCS position on the applicability of GEN-27 was documented in an internal correspondence to all NCS staff and to Building C-720 management. As a result of the revised NCS position, Building C-720 management took additional steps to reassess the status of equipment in the building and to relocate some equipment to within the coverage area of the building CAAS. This latter action was taken following entry into the TSR LCO Action Statements for equipment requiring CAAS coverage.

On May 29, 1997, an engineering notice was issued which formally rescinded the March 3 NCS memorandum.

10 CFR 76.93, "Quality Assurance," requires, in part, that the certificatee shall establish and execute a quality assurance program. Appendix A, Section 2.16 of the Quality Assurance Program, "Corrective Action," requires, in part, that: 1) conditions adverse to quality are identified; 2) the cause of significant conditions adverse to quality (SCAQ) is determined; and 3) corrective action is taken to preclude recurrence of SCAQs. Procedure UE2-HR-CI1031, "Corrective Action Process," defined a SCAQ to include: 1) unauthorized changes to attributes of a procedure that implement NCS requirements; and 2) problem trends that have a strong potential to lead to issues of significance.

The staff's failure to identify: 1) that the March 3, 1997, NCS memorandum implemented an unauthorized change to the applicability requirements of NCSA GEN-27 and procedure CP2-TS-TS2030; and 2) the root cause for and implement corrective actions to preclude the recurrence of violations of NCSA GEN-27 and procedure CP2-TS-TS2030 in Building C-720 was a Violation of the Quality Assurance Program, Appendix A, Section 2.16 (VIO 70-7001/97003-13).

c. Conclusions

The inspectors identified a violation of Section 2.16 of the Quality Assurance Program, "Corrective Actions." The violation involved management's acceptance of the use of informal processes to implement and change some NCS controls which contributed to recurring violations of NCSA GEN-27 and procedure CP2-TS-TS2030 in Building C-720.

E8. Miscellaneous Engineering Issues (90712)

E8.1 Certificatee Event Reports

The certificatee made the following engineering-related event reports during the inspection period. The inspectors reviewed any immediate safety concerns indicated at the time of the initial verbal notification. The inspectors will evaluate the associated written reports for each of these items following their submittal.

Number	Status	Title
32264	Open	Double Batching of Environmental Monitoring Samples Delivered to Building C-710. (CER 70-7001/97003-14)
32407	Open	Movement of Legacy Equipment Prior to Characterization For Application of Proper Criticality Controls. (CER 70-7001/97003-15)

IV. Plant Support

F1. Conduct of Fire Protection Activities

F1.1 Inspector Test Valve Deficiencies (88100)

a. Inspection Scope

The inspectors reviewed the circumstances surrounding two event reports made to the NRC concerning inspector test valve (ITV) connection deficiencies for the process building sprinkler systems.

b. Observations and Findings

On April 26 and 27, plant staff notified the NRC of missing flow-restricting orifices on the ITV connections for Building C-333 sprinkler systems B-9 and D-1, Building C-335 sprinkler systems 2, 28, and 33, and Building C-337 sprinkler system A-5 (Event Numbers 32228 and 32231). Fire detection or alarms in the process buildings were based on water flow through a sprinkler system's ITV (the systems are wet-pipe systems) causing an annunciator to alarm in the Building C-300 Central Control Facility. Surveillance Requirement 2.4.4.5-2 of TSR 2.4.4.5 required an annual functional test of each high-pressure fire water sprinkler system. The test was required, in part, to ensure that an alarm was received in Building C-300 within 90 seconds when a flow of water equivalent to that which would flow through one sprinkler head was established. The missing flow-restricting orifices at the end of the pipes for the ITVs meant that the water flow, during the functional test of the system, was greater than the maximum flow from a single sprinkler head. This condition could result in a partially blocked system incorrectly appearing to pass the surveillance test.

As a result of the initial discoveries of the missing ITV orifices, and subsequent determination that the last annual surveillances for the systems were inadequate, the PSS declared the affected sprinkler systems inoperable and initiated the LCO-required fire watches.

The inspectors performed a followup tour of Building C-335 with the plant fire engineer. During the tour, the inspectors discovered that two of the ITV-connection pipes had holes in the bottom of the pipes. The holes were on portions of the pipe exterior to the building and appeared to be the result of corrosion over an extended period of time. The inspectors noted that the presence of holes in the piping would non-conservatively affect the amount of water passed by the system during the annual surveillance or when post-maintenance testing was performed. These nonconformances in the pipes were not identified during the recently completed system walkdowns.

Section M1.3 of NRC Observation Report 70-7001/96006(DNMS) documented the plant staff's discovery in October 1996 of ITVs inside the process buildings with sight glasses without the proper flow-restricting orifices. Subsequent walkdowns and inspections of the interior and exterior

ITVs were performed to assure all ITVs had the proper orifices. According to the plant fire protection engineer, these walkdowns were completed and corrective actions implemented prior to the NRC assuming regulatory authority on March 3, 1997. The engineer also indicated that the personnel who performed the walkdowns were generally knowledgeable of the expected configuration of the sprinkler systems.

The inspectors noted the high pressure fire water system walkdowns, performed following the October 1996 discovery of missing ITV orifices, were conducted by several individuals based upon verbal or general written instructions. The walkdowns which led to the event reports on April 26 and 27 were also conducted based upon verbal or general written instructions. As a result, during the inspectors walkdown of the system, additional nonconformances were identified. These nonconformances could negatively affect the results of previously performed surveillance tests.

10 CFR 76.93, "Quality Assurance," requires, in part, that the certificatee shall establish and execute a quality assurance program. Section 2.5.1 of the Quality Assurance Program, "INSTRUCTIONS, PROCEDURES, AND DRAWINGS," states: " Measures are in place to ensure that activities affecting quality are prescribed by documented procedures, drawings, and instructions, appropriate to the circumstances, and are accomplished in accordance with these documents. These documents include quantitative and qualitative acceptance criteria to ensure that important operations have been satisfactorily accomplished." However, Compliance Plan Issue 29 states that the process building high pressure sprinkler systems, designated augmented quality systems, would not be in compliance with the quality assurance program until December 31, 1997. Therefore, the plant staff's failure to ensure that an activity affecting quality, that is, inspection of the high pressure fire water system, was not performed by procedures, drawings, or instructions appropriate to the circumstances will not be cited as a violation.

c. Conclusions

An informal approach to performing inspections after identification of non-conforming ITVs associated with the process building sprinkler systems in October 1996 and April 1997 led to the plant staff having to perform the inspections again. As a result, plant staff had to remove the sprinkler systems from service to re-perform previous inadequate annual surveillances.

F8 Miscellaneous Matters

FS8.1 Certificatee Event Reports (90712)

The certificatee made the following plant support related event reports during the inspection period. The inspectors reviewed any immediate safety concerns indicated at the time of the initial verbal notification. The inspectors will evaluate the associated written reports for each of these items following their submittal.

Number	Status	Title
32215	Open	Deficiencies in Building C-333 Sprinkler Systems A-4, B-4, and C-5. (CER 70-7001/97003-16)
32222	Open	Deficiencies in Building C-337 Sprinkler Systems A-4, A-5, A-8, A-16, B-1, B-4, B-12, B-16, C-8, and D-1. (CER 70-7001/97003-17)
32228	Open	Deficiencies in Buildings C-333 (B-9 and D-1) and C-335 (2, 28, and 33) Sprinkler Systems. (CER 70-7001/97003-18)
32231	Open	Deficiencies in Building C-315 Sprinkler System Branch Lines and Building C-337 Sprinkler System A-5. (CER 70-7001/97003-19)
32238	Open	Deficiencies in Building C-335 Sprinkler Systems 9 and 28. (CER 70-7001/97003-20)
32252	Open	Deficiencies in Building C-315 Sprinkler Systems. (CER 70-7001/97003-21)
32268	Open	Deficiencies in Building C-331 and C-335 Sprinkler Systems. (CER 70-7001/97003-22)
32278	Open	Deficiencies in Building C-315 Sprinkler Systems. (CER 70-7001/97003-23)
32320	Open	Deficiencies in Building C-333 Sprinkler System D-7 Due to Inadequate Configuration Control During Modifications. (CER 70-7001/97003-24)
32324	Open	Foreign Material Found In Building C-337 Sprinkler System D-7. (CER 70-7001/97003-25)
*****	Open	Possible Compromise of Information Classified as Secret Restricted Data (SRD) pursuant to 10 CFR 95.57(b) Reported to Region III on May 29, 1997. IFI 70-7001/97003-26).

V. Management Meetings

X. Exit Meeting Summary

The inspectors presented the inspection results to members of the plant staff management at the conclusion of the inspection on June 2, 1997. The plant staff acknowledged the findings presented.

The inspectors asked the plant staff whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

United States Enrichment Corporation

*J. H. Miller, Vice President - Production
*J. A. Labarraque, Safety, Safeguards and Quality Manager

Lockheed Martin Utility Services (LMUS)

*S. A. Polston, General Manager
*H. Pulley, Enrichment Plant Manager
*W. E. Sykes, Nuclear Regulatory Affairs Manager
*S. R. Penrod, Operations Manager

United States Department of Energy (DOE)

*G. A. Bazzell, Site Safety Representative

Nuclear Regulatory Commission (NRC)

*K. G. O'Brien, Senior Resident Inspector
*J. M. Jacobson, Resident Inspector

*Denotes those present or who participated by telephone in the June 2, 1997 exit meetings.

Other members of the plant staff were also contacted during the inspection period.

INSPECTION PROCEDURES USED

IP 88100	Plant Operations
IP 88102	Surveillance Observations
IP 88103	Maintenance Observations
IP 88105	Management Oversight and Controls
IP 88020	Regional Criticality Safety
IP 90712	Inoffice Review of Events
IP 92703	Confirmatory Action Letters

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

70-7001/97003-01	VIO	failure to perform TSR required monitoring
70-7001/97003-02	VIO	failure to maintain TSR required exclusion area
70-7001/97003-03	VIO	failure to implement TSR required compensatory measures
70-7001/97003-04	NCV	failure to maintain TSR required minimum staffing
70-7001/97003-05	CER	wics actuation in building c-360
70-7001/97003-06	CER	slow closing valves on 1e autoclave
70-7001/97003-07	CER	slow closing valves on 2n, 2s, 1w autoclaves
70-7001/97003-08	CER	use of TSR 1.6.4. during small outgassing
70-7001/97003-10	VIO	use of wrong scales to measure cylinder weight
70-7001/97003-11	VIO	use of inadequate procedure to perform post maintenance test
70-7001/97003-12	NCV	double batching of environmental samples
70-7001/97003-13	VIO	ineffective corrective actions to GEN-27 violations
70-7001/97003-14	CER	double batching of environmental samples
70-7001/97003-15	CER	movement of legacy equipment prior to characterization
70-7001/97003-16	CER	deficiencies in building c-333 sprinkler systems
70-7001/97003-17	CER	deficiencies in building c-337 sprinkler systems
70-7001/97003-18	CER	deficiencies in buildings c-333 and c-335 sprinkler systems
70-7001/97003-19	CER	deficiencies in buildings c-315 and c-337 sprinkler systems
70-7001/97003-20	CER	deficiencies in building c-335 sprinkler systems
70-7001/97003-21	CER	deficiencies in building c-315 sprinkler systems
70-7001/97003-22	CER	deficiencies in buildings c-331 and 335 sprinkler systems
70-7001/97003-23	CER	deficiencies in building c-315 sprinkler systems
70-7001/97003-24	CER	deficiencies in building c-333 sprinkler systems
70-7001/97003-25	CER	foreign material in building c-337 sprinkler system
70-7001/97003-26	IFI	possible compromise of classified information, 1 hr report

Closed

70-7001/97003-09	CER	notification of pcb spill to state authorities

Discussed

70-7001/97002-04	VIO	inoperable criticality accident alarm system clusters

LIST OF ACRONYMS USED

A.C.	Alternating Current
ANSI	American National Standards Institute
ARP	Alarm Response Procedure
CAAS	Criticality Accident Alarm System
CAL	Confirmatory Action Letter
CER	Certificatee Event Report
CFR	Code of Federal Regulations
CP	Compliance Plan
D.C.	Direct Current
IC	Incident Commander
IM	Instrument Mechanic
LCC	Limiting Condition for Operation
LS	Limited Spacing
LTO	Long Term Order
MIC	Manager in Charge
NCS	Nuclear Criticality Safety
NCSA	Nuclear Criticality Safety Approval
NCSE	Nuclear Criticality Safety Evaluation
NCV	Non-Cited Violation
NOED	Notice of Enforcement Discretion
NOV	Notice of Violation
NRC	Nuclear Regulatory Commission
PEH	Planned Expeditious Handling
PGLD	Process Gas Leak Detection
PIDs	Piping and Instrumentation Drawings
PM	Preventive Maintenance
PORC	Plant Operations Review Committee
PSS	Plant Shift Supervisor
SAR	Safety Analysis Report
TSR	Technical Safety Requirement
UF6	Uranium Hexafluoride
UH	Uncomplicated Handling
USEC	United States Enrichment Corporation
VIO	Violation
WICS	Water Inventory Control System