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U-602776
4F.190

July 9, 1997

Docket No. 50-461

Mr. James Lieberman
Director, Office of Enforcement
United States Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

SUBJECT: Reply to Notice of Violation
Clinton Power Station (CPS), Docket No. 50-461
NRC Inspection Report Nos. 50-461/96009,
50-461/96010, 50-461/96011, 50-461/96012, 50-461/014
and Office of Investigations Report 3-96-047,
EA Nos. 06-412, 97-001, 97-002, and 97-060

Dear Mr. Lieberman:

Illinois Power Company has reviewed the NRC's June 9, 1997, Notice of Violation and Proposed Civil Penalties related to inspections conducted at Clinton Power Station (CPS) between July 30, 1996 and January 23, 1997. This letter and accompanying attachments are Illinois Power's response required under 10 CFR § 2.201. We accept the violations and agree to pay the proposed civil penalty. A check for the amount of the proposed civil penalty is enclosed.

Attachment I describes station-wide initiatives CPS has undertaken to address the generic issues raised by these violations. These improvement initiatives relate to (a) plant material condition, (b) procedural compliance and adequacy and conservative decision-making, (c) safety screenings and evaluations, and (d) assessments and correction action. We have taken actions to place plant and equipment condition limits on plant operation and have conducted system readiness reviews to ensure safe and reliable operation. Management expectations for procedure adherence and conservative decision-making have been reinforced through a series of training seminars and various forms of employee communications. Finally, to maintain and build upon the progress we have made to date, we have developed and are implementing a Long-Term Improvement Plan.

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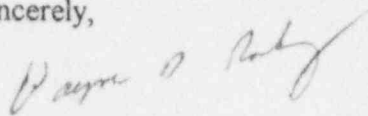


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Attachment II to this letter contains our specific responses to each violation, including: (a) background and reason for the violation; (b) corrective steps taken and results achieved; (c) corrective steps to avoid future violation and (d) the date when full compliance will be achieved.

Please contact me if you have any questions regarding this response or the actions being taken to address these violations.

Sincerely,



Wayne D. Romberg
Assistant Vice President

JRF/krk

Attachments

cc: Regional Administrator, Region III
NRC Senior Resident Inspector, Clinton Power Station
Document Control Desk
NRC Clinton Licensing Project Manager
Illinois Department of Nuclear Safety

STATE OF ILLINOIS
COUNTY OF DEWITT

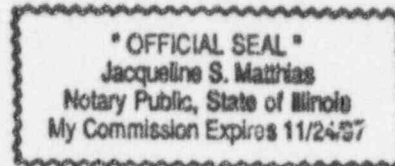
Wayne D. Romberg, being first duly sworn, deposes and says: I am the Assistant Vice President of Illinois Power Company. The foregoing Response to Notice of Violation and Proposed Imposition of Civil Penalty (Letter No. U-602776), dated July 9, 1997, and the attached Reply to Notice of Violation (Attachments to Letter No. U-602776), were prepared under my supervision and direction. I know the contents thereof, and to the best of my knowledge and belief the facts contained therein are true and correct.

Wayne D. Romberg

Wayne D. Romberg

Dated: July 9, 1997

Subscribed and sworn to
before me this 9th day of July, 1997



Jacqueline S. Matthias
Notary Public

My Commission Expires:

11-24-97

ATTACHMENT I

IMPROVEMENT INITIATIVES RESULTING FROM THE SEPTEMBER 5, 1996 EVENT

This attachment describes broad, station-wide actions Illinois Power (IP) initiated to address generic issues raised by the violations identified in the NRC June 9, 1997, Notice of Violation.

Our initial improvement initiative was the Startup Readiness Action Plan (SRAP), which specifically addressed the September 5, 1996, event and findings of associated NRC inspections and CPS assessments. Based on subsequent assessments by IP and inspections by the NRC, and additional events during the sixth refueling outage (RF-6), IP determined a need for a more deliberate and comprehensive approach to assessing CPS readiness to restart and achieving long term improvements in performance. Accordingly, in March 1997, IP developed a Strategic Recovery Plan (SRP). The SRP incorporates the SRAP actions and addresses additional issues associated with plant systems and hardware, programs and procedures, and organizations. The SRP also included reviews to ensure that CPS is ready for restart and incorporates performance measures to be used in determining progress in achieving performance improvement. Implementation of the pre-startup activities in the SRP is nearly complete. In addition, the SRP has guided the development of our Long-Term Improvement Plan, which was submitted to the NRC by letter dated July 2, 1997.

The discussion below summarizes the actions taken to address plant material condition; procedure compliance and adequacy and conservative decision-making; 10 CFR 50.59 improvements; assessments and corrective actions.

I. Plant Material Condition Improvements

One of the lessons learned from the September 5, 1996, event was the effect that degraded plant material condition can have on plant operation. Accordingly, during the recent outage Illinois Power has taken action to improve the material condition of CPS and ensure that it will support safe, reliable operation. These measures include:

- System Readiness Reviews: As part of our strategic recovery plan, we conducted system readiness reviews for vital and non-vital systems to identify conditions that have any significant potential to affect safe and reliable operation of CPS. These reviews included plant configuration verification, reviews of main control room deficiencies, open maintenance work requests, and open condition reports to ensure that plant systems are capable of supporting safe operation. Material deficiencies identified were corrected during this outage. In addition, our Long-Term Improvement Plan will include actions for monitoring and trending system performance

and prioritizing work.

- Quarterly Material Condition Reviews: Illinois Power established a senior management quarterly review team charged with ensuring that material deficiencies are resolved promptly and efficiently. This review team, comprised of the Vice President-Nuclear, Manager-Clinton Power Station, Manager-Nuclear Station Engineering, and other senior management team members establishes a high level of management involvement in resolving material deficiencies. This review team has already met twice resulting in the prioritization of existing material issues and the identification of goals and expectation for resolving these issues.
- Establishment of Plant or Equipment Condition Limits: Because one of the contributing causes of the September 5, 1996, event was the degraded condition of certain plant components, Illinois Power has established plant or equipment condition limits to ensure conservatism in the operation of selected key systems. Operation of the plant at power, with reactor recirculation pump seal degradation exceeding conservatively established limited will not be permitted. A similar administrative limit has been established for turbine vibration. Additional plant or equipment condition limits will be developed as part of the CPS Long-Term Improvement Plan.

In addition to the actions discussed above, IP has corrected specific equipment deficiencies involved in the September 5, 1996 event, including:

- Replacing both reactor recirculation pump seal assemblies and increasing our monitoring of seal performance.
- Repairing and testing both the Drywell Floor Drain (RF) and Equipment Drain (RE) leak detection and flow measurement instrumentation.
- Incorporating leak detection calculation methods based on RF and RE sump fill times into the process computer; and
- Cleaning permanent drywell drain piping by hydro-lasing and applying a chemical biocide.

II. Procedure Compliance and Adequacy and Conservative Decision-Making

The September 5, 1996 event, along with subsequent NRC inspections and Illinois Power assessments, revealed weaknesses in CPS procedures and adherence to procedures, as well as its decision-making process. This section describes the many initiatives we have completed or are underway to address this issue.

A. Management Oversight and Expectations on Procedure Adherence and Conservation Decision Making

Since the September 5, 1996, event there has been a significant increase in management oversight and direction at CPS. Management expectations for safety, conservative decision-making, and adherence to procedures have been clearly formulated, communicated, and reinforced. The following actions have been taken:

- CPS management developed and committed to a written charter that reaffirms that nuclear safety is the management team's highest priority.
- CPS Procedure No. 1005.01, "CPS Procedures and Documents," was revised to provide clearer guidance on procedure use and adherence. A new procedure, CPS Procedure No. 1005.15, "Procedure Use and Adherence," has also been issued which makes clear management's expectation for strict procedure compliance, and that procedures shall be changed if they cannot be implemented as written.
- Policy Statements on conduct of operations, procedure compliance, and conservative decision-making were updated and revised.
- Seminars on procedure compliance and conservative decision-making were conducted for CPS Managers, Operations personnel, System Engineers, Shift Technical Advisors, and selected additional personnel.
- In October 1996, site employees and contractors working at CPS were required to attend training seminars on procedure adherence, which included: (1) a review of the September 5 event and resulting lessons learned; (2) procedural compliance and adherence training on Appendix B, Criteria V; (3) conservative decision-making; (4) a presentation on management oversight and roles; and (5) specific training on when procedure changes should be made and how to accomplish them.
- The Vice President, CPS, met with each supervisor to obtain a written agreement on a "contract" of responsibilities shared by CPS management team members to ensure safe, reliable CPS operation.
- The Manager-Clinton Power Station has interviewed each Operations crew member to ensure understanding of expectations regarding safe and conservative operation, procedural compliance, responsibility for ensuring safe plant configurations, and other operator responsibilities.
- The Operations department issued written departmental management expectations on the conduct of safe operations.

- The Radiation Protection department issued written guidance reinforcing conservative decision-making relating to radiation safety.
- Conservative decision-making training, emphasizing safety of operation and procedure compliance, has been incorporated into accredited continuing training programs.
- Various forms of employee communications used on site, including billboards, newsletters, and video monitors, are being used to reinforce management's expectations for safe, conservative plant operations and procedure compliance.

To further enforce its expectations, CPS management declared two work stoppage stand-downs during the months of January and February, after events occurred that indicated that safety focus and procedural compliance were not meeting CPS standards. During the stand-downs, employees attended briefings presented by supervision in which the recent errors and the significance of the errors were discussed. Employees were coached in error-reduction techniques and methods to apply these techniques to help reduce errors. During these meetings, employees also had the opportunity to discuss frustrations, concerns, and problems they were experiencing. Prior to resuming work activities, each site department head submitted written confirmation to the Plant Manager indicating how his organization would satisfactorily implement self-checking techniques.

Finally, additional training and monitoring will be conducted as part of our Long-Term Improvement Plan to ensure sustained improvement in procedure quality and adherence and conservative decision making.

B. Procedure Adequacy

IP formed a special team to review and revise procedures governing procedure adherence, conservative decision-making, and management oversight. Provisions that could be misinterpreted and lead to procedure noncompliance were deleted, and management's expectations on procedure adherence and when procedure questions are to be brought to the attention of supervision were clarified. Steps to be taken when problems or errors in procedures are encountered were changed to clearly reflect the expectation to stop work and have the procedure changed before proceeding.

IP also conducted reviews of several important categories of procedures, with an emphasis on procedure compliance and adherence, and a recognition of the need to have appropriate guidance in station procedures and less reliance on tool box skills. These reviews included:

- Operating and surveillance procedures were reviewed for adequacy and enhancements. Revisions to surveillance procedures resulting from this review have been completed.
- Operations Department personnel performed reviews and walkdowns of approximately 160 system operating procedures to identify and correct any procedure inadequacies that might prohibit successful completion of an operational evolution. Procedure revisions resulting from this review have been completed.
- Operating crew personnel have reviewed procedures for scheduled surveillances for the current refueling outage (RF-6) and startup prior to implementation to identify and correct inadequacies that could have prevented successful completion of surveillance activities. Revisions to surveillance procedures resulting from this review have been completed.
- The procedures for Conduct of Operations and Authorities and Responsibilities for Reactor Operators For Safe Operation and Shutdown were revised to give clear direction on conservative decision-making. Procedure steps that could be construed as nonconservative were deleted or modified.
- The Operations procedures associated with various normal and startup activities were exercised in the simulator by the operating crews to ensure clarity, consistency, and ease of use. These included procedures for activities such as plant startup, single loop operation, leak detection, reactor coolant leakage, long cycle lineup, operations, and others. Seventeen operating procedures and documents were revised as a result of this review.
- The establishment of a Radiation Protection Procedure Enhancement Team to review RP procedures for accuracy, viability, and compliance with regulations. The product of this review will be analyzed independently by the Procedures Group in the CPS Plant Support Services Department.
- An independent, site-wide assessment on the training provided for procedural use and adherence was performed by the Quality Assurance Department. Although the findings were generally acceptable, an area identified for additional attention was the Control and Instrumentation (C&I) Maintenance Group. CPS provided additional training for C&I regarding procedural use and adherence and is monitoring to ensure that management expectations on procedural use and compliance are met.
- Additional surveillance procedure reviews and comparison to industry best practices will be conducted as part of our Long-Term Improvement Plan.

III. Clinton Power Station 10 CFR 50.59 Improvement Plan

NRC inspections and an independent assessment of the CPS Nuclear Station Engineering Department (NSED) identified weaknesses in the implementation of the CPS 10CFR50.59 safety evaluation program. These weaknesses fell into three general categories:

- (1) safety evaluations not performed due to individuals not recognizing that activities being performed may involve activities or a test not described in the CPS Updated Safety Analysis Report (USAR);
- (2) inadequate documentation of justifications for why changes do not require the performance of a full safety evaluation; and
- (3) insufficient review of licensing basis documentation to determine the impact of proposed changes.

In response to the identification of these weaknesses, Illinois Power took the following immediate actions. IP conducted a review of approximately 220 engineering changes implemented during RF-6 to determine whether any change involved an unreviewed safety question. Out of this review, Illinois Power identified nineteen safety evaluation screenings that did not adequately justify why the change did not constitute an unreviewed safety question. Full safety evaluations have been completed for these changes; none have been found to identify an unreviewed safety question. In addition, IP conducted awareness training for approximately 300 people on site at all levels, but primarily directed at those people involved in work processes. This training provided an overview of 10 CFR 50.59 requirements and included a discussion of identified weaknesses in the implementation of the CPS safety evaluation process.

After completing these immediate actions, Illinois Power developed a 50.59 action plan that addressed both short-term and long-term measures aimed at achieving lasting improvements to our program. The following actions have been completed:

- Illinois Power revised the CPS procedure governing the conduct of safety reviews to require review of all safety screenings and evaluations by persons designated in writing by the Licensing Department as core reviewers;
- CPS Plant Staff, Licensing, and Engineering Departments designated personnel as core reviewers based on their demonstrated performance or experience in implementing 10CFR50.59 requirements. Also, outside experts were hired to work with and help train the core reviewers;

- CPS qualified safety evaluation preparers have been provided enhanced training on the CPS safety evaluation process which included lessons learned from the violations documented in NRC inspection reports and weaknesses identified by the NSED assessment;
- Core reviewers were provided with additional specialized training on 10CFR50.59 requirements;
- Illinois Power conducted a root cause determination of CPS safety evaluation weaknesses, which included a review of condition reports covering safety evaluation deficiencies.

We have also identified long-term improvement efforts aimed at further improving our safety evaluation program. These efforts will include:

- Implementing additional corrective actions identified by the root cause investigation, including establishing and implementing performance measures and indicators for the CPS Safety Evaluation Program, and establishing more comprehensive training on the USAR and other licensing basis documents.
- Establishing annual refresher training for safety evaluation preparers and core reviewers ;
- Performing a self-assessment of our safety evaluation program scheduled for the fourth quarter of 1997. Additionally, IP is developing performance indicators for the program.

IV. Improvements in Assessments and Corrective Actions

The violations involving the diesel generators and feedwater check valves, as well as other deficiencies identified by NRC inspections and CPS assessments, revealed a weakness in identification and correction of problems. Illinois Power has taken a number of actions to improve in these areas.

CPS has taken actions to establish a work environment that encourages timely reporting of safety concerns and to strengthen human error reduction measures at CPS. These actions included reinforcing management's expectation that questions involving conditions adverse to quality are to be documented in the CPS Condition Report (CR) program. As a result, the threshold for writing condition reports has been lowered dramatically, resulting in a notable sustained increase in the rate of initiation of CRs.

The site procedure for conducting critiques and fact findings of events was reviewed and revised to (1) require appropriate personnel to chair and attend critiques, (2) require appropriate independent and objective inputs from other departments at the critiques, (3) require in-depth fact finding during the critique, (4) establish clear expectations for timeliness of critique evaluations and documentation, (5) require specific determinations on whether procedure noncompliances or nonconservative operations occurred during the event being critiqued, and (6) require a timely review and concurrence of the facts by appropriate senior management. Additional actions to improve our critique process, including additional training, will be incorporated into our Long-Term Improvement Plan.

Because the corrective action program is critical to future performance, IP has created an independent group of root cause analysts, whose full-time responsibilities are investigating and solving problems. IP has created a new position, Director - Independent Analysis to provide oversight for this group. The mission of the Independent Analysis Group (IAG) is to prevent events and improve station performance by performing rigorous root cause analyses, developing effective, technology-based corrective actions, developing and maintaining a mature performance monitoring program, and ensuring proper execution of performance improvement actions. Corrective action trending responsibilities have moved from the Quality Assurance department to the IAG, and nine root cause investigator positions have been filled. This group is fully staffed and functional.

V. Conclusion

Illinois Power has carefully assessed the violations for generic implications. Our corrective actions have been tailored to both address the specific issues associated with each violation as described in Attachment II as well as broader site-wide weaknesses revealed by the violations. We will continue to seek improvements in these areas in conjunction with our Long-Term Improvement Plan and will continue to gauge our progress through continued self-assessment and monitoring of our performance indicators.

ATTACHMENT II **RESPONSES TO SPECIFIC VIOLATIONS**

This attachment describes the actions Illinois Power has taken to address the violations contained in the NRC's June 1997 Notice of Violation and Proposed Civil Penalty. Illinois Power accepts each violation listed in the NOV.

Violation 96-10-02a

Restatement of Violation

A. Reactor Recirculation Pump Seal Failure

Clinton Power Station (CPS) Technical Specification 5.4.1.a requires, in part, that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," states, in part, that procedure adherence (Section 1.d) and recirculation system (Section 4.a) are typical safety-related activities which should be covered by written procedures.

CPS 1005.14 (Rev. 4), "Formatting of Procedures and Documents," a procedure required by Section 1.d of RG 1.33, at Step 8.1.11.4, states in part, that if a specific order of performing the procedure is required, an asterisk (*) at the beginning of the section to annotate that the steps to be performed in the sequence that they are written.

CPS 3302.01 (Rev. 18), "Reactor Recirculation," a procedure required by Section 4.a of RG 1.33, specified that Section 8.2.4 was required to be performed in sequence as indicated by the "*" next to the section heading.

Section 8.2.4 of CPS 3302.01 specified, in part, the sequence to isolate an idle reactor coolant loop as follows:

- Step 8.2.4.4: Cool the idle loop to < 250°F
- Step 8.2.4.5: Shut 1B33-F075B, "Pump B Seal Stage Shutoff Valve"
- Step 8.2.4.6: Shut 1C11-F026B, "CRD Supp Isol to RR Pump B"

1. Contrary to the above, on September 5, 1996, the operators failed to perform the steps in the sequence specified in Section 8.2.4 as demonstrated by their failure to wait until the idle reactor coolant loop had cooled to < 250°F as specified in Step 8.2.4.4 before performing step 8.2.4.5 and shutting 1B33-F075B.

Background and Reason for Violation

Clinton Power Station (CPS) procedure 1005.14, "Formatting of Procedures and Documents," Step 8.1.11.4, states that if a specific order for performing procedure steps is required, an asterisk (*) should be placed at the beginning of the section to annotate that the steps are to be performed in the sequence they are written. During the single loop isolation operation on September 5, 1996, a decision was made to close 1B33-F075B (Reactor Recirculation Seal Staging Shutoff Valve) by the operations crew. This action was performed in accordance with CPS procedure 3302.01, "Reactor Recirculation," step 8.2.4.5. Section 8.2.4, had an asterisk at the beginning requiring the steps in this section to be performed in the sequence as written. Step 8.2.4.4 does not contain an action but provides instructions for conditions to be met prior to proceeding in the procedure, specifically, to allow the idled reactor coolant loop to cool down to below 250 degrees prior to continuing in this section. Operators failed to wait as specified by section 8.2.4.4 for the idle reactor coolant loop temperature to decrease below 250 degrees before shutting valve 1B33-F075B as specified in step 8.2.4.5. The cause for this violation was vague expectations on procedural compliance and lack of rigor in complying with procedures.

Corrective Steps Taken and Results Achieved

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.

Additionally, plant and equipment condition limits have been provided to ensure operational conservatism. Operation of the plant at power, with Reactor Recirculation pump seal degradation exceeding conservatively established limits will not be permitted. CPS procedure 3302.01 was revised to shutdown the plant in the event of a failure of either of the two, 100 percent redundant, Reactor Recirculation Pump seals.

Corrective Steps to Avoid Further Violation

- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. The management monitoring program consists of senior CPS management, senior management from other facilities, Institute of Nuclear Power Operations (INPO) members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.
- Conservative decision making emphasizing safety of operation and procedure compliance has been incorporated into the accredited continuing training programs.
- A follow-up seminar on conservative decision making emphasizing safety of operation and lessons learned from CPS and industry experience, will be provided to site Managers, Plant Staff Directors and Assistant Directors, Work Control Team Leaders, Facility Review Group Members, Licensed and Non-Licensed Operators, Shift Technical Advisors, System Engineers, active operator license holders, and management monitors.
- Following return to normal eight-hour shifts after RF-6, the Plant Manager will begin a practice of routinely having informal conversations with off-going midnight operations personnel. This will enhance communication between crew members and the Plant Manager and ensure awareness of operational conditions and conservative decision making policies.
- In April 1997, CPS issued Procedure 1005.15, "Procedural Use and Adherence," which makes clear management's expectation for strict procedural compliance. Site wide training seminars were conducted to ensure understanding and management's commitment to procedural compliance.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-10-02b

Restatement of Violation

A. Reactor Recirculation Pump Seal Failure

Clinton Power Station (CPS) Technical Specification 5.4.1.a requires, in part, that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," states, in part, that procedure adherence (Section 1.d) and recirculation system (Section 4.a) are typical safety-related activities which should be covered by written procedures.

CPS 1005.14 (Rev. 4), "Formatting of Procedures and Documents," a procedure required by Section 1.d of RG 1.33, at Step 8.1.11.4 states, in part, that if a specific order of performing the procedure is required, an asterisk (*) at the beginning of the section to annotate that the steps to be performed in the sequence that they are written.

CPS 3302.01 (Rev. 18), "Reactor Recirculation," a procedure required by Section 4.a of RG 1.33, specified that Section 8.2.4 was required to be performed in sequence as indicated by the "*" next to the section heading.

Section 8.2.4 of CPS 3302.01 specified, in part, the sequence to isolate an idle reactor coolant loop as follows:

- Step 8.2.4.4: Cool the idle loop to < 250°F
- Step 8.2.4.5: Shut 1B33-F075B, "Pump B Seal Stage Shutoff Valve"
- Step 8.2.4.6: Shut 1C11-F026B, "CRD Supp Isol to RR Pump B"

2. Contrary to the above, on September 5, 1996, the operators failed to perform the steps in the sequence specified in Section 8.2.4 as demonstrated by their failure to wait until the idle reactor coolant loop had cooled to < 250° F before performing Step 8.2.4.6 and shutting 1C11-F026B.

Background and Reason for Violation

Clinton Power Station (CPS) procedure 1005.14, "Formatting of Procedures and Documents," Step 8.1.11.4, states that if a specific order for performing procedure steps is required, an asterisk (*) should be placed at the beginning of the section to annotate that the steps are to be performed in the sequence they are written. During the single loop isolation operation on September 5, 1997, a decision was made to close 1C11-F026B,

Control Rod Drive Supply Isolation, by the operations crew. This action was performed in accordance with CPS procedure 3302.01, "Reactor Recirculation," step 8.2.4.6. Section 8.2.4, had an asterisk at the beginning requiring the steps in this section to be performed in the sequence as written. Step 8.2.4.4 does not contain an action but provides instructions for conditions to be met prior to proceeding in the procedure, specifically, to allow the idled reactor coolant loop to cool down to below 250 degrees prior to continuing in this section. Operators failed to wait as specified by section 8.2.4.4 for the idle reactor coolant loop temperature to decrease below 250 degrees before shutting valve 1C11-F026B as specified in step 8.2.4.6. The cause for this violation was vague expectations on procedural compliance and lack of rigor in complying with procedures.

Corrective Steps Taken and Results Achieved

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through training which consisted of the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.

Additionally, plant and equipment condition limits have been provided to ensure operational conservatism. Operation of the plant at power, with Reactor Recirculation pump seal degradation exceeding conservatively established limits will not be permitted. CPS procedure 3302.01 was revised to shutdown the plant in the event of a failure of either of the two, 100 percent redundant, Reactor Recirculation Pump seals.

Corrective Steps to Avoid Further Violation

- In April 1997, CPS issued Procedure 1005.15, "Procedural Use and Adherence," which makes clear management's expectation for strict procedural compliance. Site wide training seminars were given to ensure understanding and management's commitment to procedural compliance.

- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. The management monitoring program consists of senior CPS management, senior management from other facilities, INPO members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.
- Conservative decision making emphasizing safety of operation and procedure compliance has been incorporated into the accredited continuing training programs.
- A follow-up seminar on conservative decision making emphasizing safety of operation and lessons learned from CPS and industry experience, will be provided to site Managers, Plant Staff Directors and Assistant Directors, Work Control Team Leaders, Facility Review Group Members, Licensed and Non-Licensed Operators, Shift Technical Advisors, System Engineers, active operator license holders, and management monitors.
- Following return to normal eight-hour shifts after Refueling Outage RF-6, the Plant Manager will begin a practice of routinely having informal conversations with off-going midnight operations personnel. This will enhance communication between crew members and the Plant Manager and ensure awareness of operational conditions and conservative decision making policies.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-11-03c

Restatement of Violation

B. Failure to Follow Procedures

1. Clinton Power Station (CPS) Technical Specification 5.4.1.a requires, in part, that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," states, in part, that the following are typical safety related activities that should be covered by written procedures: shift and relief turnover (Section 1.g); log entries (Section 1.h); changing loads (Section 2.f); fuel storage cooling system (Section 4.k); control room heating and ventilation system (Section 4.s); and loss of coolant (including leak-rate determination (Section 6.a)).

- a. CPS 3317.01 (Rev. 16), "Fuel Pool Cooling Cleanup," a procedure required by Section 4.k of RG 1.33, at Step 8.1.2.14, required that valve 1FC004A or 1FC004B on the idle spent fuel pool loop be closed.

Contrary to the above, between September 18 and 25, 1996, operators failed to close 1FC004A in the idle "A" train fuel pool cooling loop as required by CPS 3317.01.

Background and Reason for Violation

This violation states that CPS procedure 3317.01, step 8.1.2.14, requires that valve 1FC004A or 1FC004B is required to be closed for the idle spent fuel pool loop. Further discussions with the CPS Senior NRC Resident Inspector have clarified that the violation should have read that valves 1FC015A (B), FC Heat Exchanger inlet valve, and 1FC026A (B), FC Heat Exchanger outlet valve, are required to be closed for the idle spent fuel pool loop in accordance with CPS procedure 3317.01, step 8.1.2.16, revision 17. During an investigation into a packing leak on 1FC004A, FC demineralizer bypass flow control valve, an NRC inspector discovered that 1FC015A and 1FC026A were open. The valves were supposed to be closed in accordance with Clinton Power Station (CPS) procedure 3317.01 step 8.1.2.16 for the FC train that was not in service. The valve misposition appears to have occurred when the "A" FC train was isolated. The cause for this event was human error. In addition, lack of rigor in complying with station procedures contributed to the event.

Corrective Steps Taken and Results Achieved

The FC system was restored satisfactorily to the specified positions as required by CPS procedure 3317.01. The Assistant Director of Plant Operations ensured that this error was reviewed by all operations crews.

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through training which consisted of the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.

Corrective Steps to Avoid Further Violation

- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. This includes monitoring of non-licensed operators while performing shift functions outside the Control Room. The management monitoring program consists of senior CPS management, senior management from other facilities, INPO members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.
- Human error reduction techniques were provided to site personnel in the form of a seminar. Employees were coached in error-reduction techniques and methods to apply these techniques to help reduce errors.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-11-03b

Restatement of Violation

B. Failure to Follow Procedures

1. Clinton Power Station (CPS) Technical Specification 5.4.1.a requires, in part, that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," states, in part, that the following are typical safety related activities that should be covered by written procedures: shift and relief turnover (Section 1.g); log entries (Section 1.h); changing loads (Section 2.f); fuel storage cooling system (Section 4.k); control room heating and ventilation system (Section 4.s); and loss of coolant (including leak-rate determination (Section 6.a)).

- b. CPS 3402.01 (Rev. 14), "Control Room HVAC," a procedure required by Section 4.s of RG 1.33, at Step 8.1.1.1.1, required the final position of 0VC043B, "Moisture Separator Drain Valve," be open and 0VC096B, "Loop Seal Fill Valve," be closed upon completion of filling the makeup air filter moisture separator loop seal.

Contrary to the above, on September 18, 1996, after filling the makeup air filter moisture separator loop seal, the licensee failed to open the moisture separator drain valve (0VC043B) and close the loop seal fill valve (0VC096B) as required by CPS 3402.10.

Background and Reason for Violation

During an investigation by plant operators into increased input to radwaste from the control building equipment drain sump, valve 0VC096B was discovered open and valve 0VC043B closed. Valve 0VC096B is the Moisture Separator Loop Seal makeup valve to 0VC09SB filter and 0VC043B is the Moisture Separator Drain valve. Further investigation concluded that the valves were left in the wrong position by a non-licensed operator while performing CPS procedure 3402.01, "Control Room HVAC," step 8.1.1.1.1.

On September 18 during startup of control room ventilation train "B" procedure 3402.01 required filling 0VC096B Moisture Separator Loop Seal. Step 8.1.1.1.1a requires the moisture separator drain valve 0VC043B to be closed, step 8.1.1.1.1b requires the loop seal fill valve 0VC096B to be opened for one minute and then closed, and step 8.1.1.1.1c requires that 0VC043B be reopened. While waiting for the loop seal to fill, the operator proceeded with other control room ventilation panel verifications later in the procedure. However, the operator failed to return the loop seal valves to their original positions as required in steps 8.1.1.1.1b and 8.1.1.1.1c. The involved operator indicated that work load or fatigue were not factors in the error. The cause for this violation was human error. A contributing factor was lack of rigor in compliance with procedures.

The specific safety significance of the error was minimal, mainly increase drain flow. However, the error could have resulted in wetting of the control room charcoal filter.

Corrective Steps Taken and Results Achieved

The mispositioned valves 0VC043B and 0VC096B were restored to the correct position per CPS procedure 3402.01. An inspection of 0VC09SB prefilter was performed and the filter was clear of water. The Shift Supervisor counseled the individual involved during the generation of the condition report on this event.

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through training which consisted of the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.

Corrective Steps to Avoid Further Violation

- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. This includes monitoring of non-licensed operators while performing shift functions outside the Control Room. The management monitoring program consists of senior CPS management, senior management from other facilities, INPO members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.
- Human error reduction techniques were provided to site personnel in the form of a seminar. Employees were coached in error-reduction techniques and methods to apply these techniques to help reduce errors.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-10-01b

Restatement of Violation

B. Failure to Follow Procedures

1. Clinton Power Station (CPS) Technical Specification 5.4.1.a requires, in part, that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," states, in part, that the following are typical safety related activities that should be covered by written procedures: shift and relief turnover (Section 1.g); log entries (Section 1.h); changing loads (Section 2.f); fuel storage cooling system (Section 4.k); control room heating and ventilation system (Section 4.s); and loss of coolant (including leak-rate determination (Section 6.a)).

- c. CPS 4001.01 (Rev. 7), "Reactor Coolant System Leakage," a procedure required by Section 6.a of RG 1.33, at Step 4.4, required the control room to notify radiation protection (RP) and request area samples and or AR/PR trending information to assist in detecting the location/source of the leak.

Contrary to the above, on September 5, 1996, RP was not notified of the need to assist in identifying the unidentified leakage.

Background and Reason for Violation

On September 5, 1996, an Unusual Event was declared due to unidentified leakage of primary reactor coolant greater than five gallons per minute (GPM). In addition, the Technical Specification (TS) Limiting Condition of Operation (LCO) was entered which allowed four hours to reduce the leakage to less than five GPM. Clinton Power Station procedure 4001.01, Step 4.4, directed the Main Control Room staff to notify Radiation Protection to help identify the source of the leak. The Main Control Room was in contact with the Radiation Protection staff throughout the event but they were not specifically asked to assist in identifying the source of the leak. The cause for this violation was inattention to detail and lack of rigor in complying with procedures.

Corrective Steps Taken and Results Achieved

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through training which consisted of the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.

Corrective Steps to Avoid Further Violation

- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. This includes monitoring of procedural compliance and adherence. The management monitoring program consists of senior CPS management, senior management from other facilities, INPO members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.
- In April 1997, CPS issued Procedure 1005.15, "Procedural Use and Adherence," which makes clear management's expectation for strict procedural compliance. Site wide training seminars were conducted to ensure understanding and management's commitment to procedural compliance.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-10-01c

Restatement of Violation

B. Failure to Follow Procedures

1. Clinton Power Station (CPS) Technical Specification 5.4.1.a requires, in part, that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," states, in part, that the following are typical safety related activities that should be covered by written procedures: shift and relief turnover (Section 1.g); log entries (Section 1.h); changing loads (Section 2.f); fuel storage cooling system (Section 4.k); control room heating and ventilation system (Section 4.s); and loss of coolant (including leak-rate determination (Section 6.a)).

- d. CPS 3005.01 (Rev. 18), "Unit Power Changes," a procedure required by Section 2.f of RG 1.33, at Step 6.1.b, required the control room to notify the chemistry department, after a thermal power change of greater than 15% in one hour, to perform the applicable sections of CPS 9940.01, "Weekly Chemistry Surveillance Log". In this case, the applicable sections required a gaseous sample.

Contrary to the above, on September 6, 1996, thermal power was changed from 55% to 38%, an amount greater than 15%, within a one-hour period, and the control room failed to notify the chemistry department so it could take a gaseous sample.

Background and Reason for Violation

On September 6, 1996, between 0228 and 0310 reactor thermal power was reduced from 55 to 38 percent. Clinton Power Station (CPS) procedure 3005.01, step 6.1.b, requires that a gaseous sample be taken when thermal power changes exceed 15 percent.

Although power had been reduced by 17 percent, it was identified that a gaseous sample was not obtained due to operations failure to notify the Chemistry department. The cause for this violation was inattention to detail and lack of rigor in complying with procedures.

Corrective Steps Taken and Results Achieved

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through training which consisted of the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.

Corrective Steps to Avoid Further Violation

- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. The management monitoring program consists of senior CPS management, senior management from other facilities, INPO members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.
- Human error reduction techniques were provided to site personnel in the form of a seminar. Employees were coached in error-reduction techniques and methods to apply these techniques to help reduce errors.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-11-03a

Restatement of Violation

B. Failure to Follow Procedures

1. Clinton Power Station (CPS) Technical Specification 5.4.1.a requires, in part, that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," states, in part, that the following are typical safety related activities that should be covered by written procedures: shift and relief turnover (Section 1.g); log entries (Section 1.h); changing loads (Section 2.f); fuel storage cooling system (Section 4.k); control room heating and ventilation system (Section 4.s); and loss of coolant (including leak-rate determination (Section 6.a)).

- e. CPS 1401.01 (Rev. 20) "Conduct of Operations," is a procedure required by sections 1.g and 1.h of RG 1.33.

- (1) Section 8.4.3.13 of CPS 1401.01 required the Line Assistant Shift Supervisor (LASS) to inform the relief operator of, at a minimum, current plant status, operations in progress and work to be performed in the immediate future.

Contrary to the above, on September 17, 1996, the LASS failed to inform the relief operator of work to be performed in the immediate future which was going to affect fuel building differential pressure. Specifically, the relief operator was not informed that the work activity would result in a high differential pressure fuel building annunciation alarm in the control room. Consequently, an operator was unnecessarily dispatched to investigate the cause of the expected alarm.

Background and Reason for Violation

During the Operational Safety Team Inspection (OSTI) following the Reactor Recirculation Seal Failure event on September 5, 1996, an NRC Inspector identified that the Line Assistant Shift Supervisor (LASS) failed to provide a proper turnover. Specifically, on September 17, 1996, the LASS was informed by phone of activities that

would affect fuel building differential pressure. The LASS failed to inform the operating crew or the Shift Supervisor (SS) providing short-term relief before leaving the control room. Shortly after the LASS left the control room, the "High Differential Pressure Fuel Building" annunciator alarmed in the control room. An operator was dispatched to investigate the cause of the alarm. Within minutes the LASS returned and upon learning of the alarm informed the crew that the alarm was expected.

Clinton Power Station (CPS) procedure 1401.01, section 8.4.3.13 states that the Reactor Operator "At the Controls" and the LASS may be relieved for short periods of time for personal reasons. As a minimum, the person being relieved shall inform the relief of the current plant status, operations in progress and work to be performed in the immediate future. The LASS failed to provide to the SS the current plant status. The cause for this violation was lack of rigor in complying with procedures. Procedural compliance and adequacy standards were not universally understood and accepted.

Corrective Steps Taken and Results Achieved

Expectations on procedure compliance and the use of three part communication were strengthened in the Operations Department. Additional guidance to reinforce proper briefings prior to turnover of watch station duties, including short term relief, were provide in CPS procedure 1401.01, revision 25.

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through training which consisted of the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.

Corrective Steps to Avoid Further Violation

- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. The management monitoring program consists of senior CPS management, senior management from other facilities, INPO members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-10-01d

Restatement of Violation

B. Failure to Follow Procedures

1. Clinton Power Station (CPS) Technical Specification 5.4.1.a requires, in part, that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," states, in part, that the following are typical safety related activities that should be covered by written procedures: shift and relief turnover (Section 1.g); log entries (Section 1.h); changing loads (Section 2.f); fuel storage cooling system (Section 4.k); control room heating and ventilation system (Section 4.s); and loss of coolant (including leak-rate determination (Section 6.a)).

- e. CPS 1401.01 (Rev. 20) "Conduct of Operations," is a procedure required by sections 1.g and 1.h of RG 1.33.

- (2) Section 8.3.3.1 of CPS 1401.01 required the shift supervisor to remain in a monitoring role during off normal operation unless he determines that the LASS is not able to deal with the situation.

Contrary to the above, on September 6, 1996, the shift supervisor failed to remain in a monitoring role and directed activities to place the unit in single loop operation without determining that the LASS was not able to deal with the situation.

Background and Reason for Violation

On September 5, 1996, the Shift Supervisor (SS) was directing activities in the Main Control Room to place the unit in single loop operation rather than remaining in a monitoring role. Clinton Power Station (CPS) procedure 1401.01, "Conduct of Operations," step 8.3.3.1, states that the SS should report to the control room and remain in a monitoring role during off normal operation unless the SS determines that the Line Assistant Shift Supervisor (LASS) is not able to deal with the situation. This is an extraordinary situation, and it is expected that in all but extreme cases the SS will remain in a monitoring role. No determination by the SS that the LASS was unable to deal with the situation was made. The cause for this violation was lack of rigor in complying with

procedures. Procedural compliance and adequacy standards were not universally understood and accepted.

Corrective Steps Taken and Results Achieved

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through training which consisted of the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.

Corrective Steps to Avoid Further Violation

- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. This includes monitoring to ensure that shift management personnel remain in their proper oversight roles. The management monitoring program consists of senior CPS management, senior management from other facilities, INPO members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-10-01e

Restatement of Violation

B. Failure to Follow Procedures

1. Clinton Power Station (CPS) Technical Specification 5.4.1 a requires, in part, that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," states, in part, that the following are typical safety related activities that should be covered by written procedures: shift and relief turnover (Section 1.g); log entries (Section 1.h); changing loads (Section 2.f); fuel storage cooling system (Section 4.k); control room heating and ventilation system (Section 4.s); and loss of coolant (including leak-rate determination (Section 6.a)).

- e. CPS 1401.01 (Rev. 20) "Conduct of Operations," is a procedure required by sections 1.g and 1.h of RG 1.33.

- (3) Section 8.4.4.10. e) and f) of CPS 1401.01 required that significant plant operating data, such as abnormal plant conditions and plant transients, be entered in the shift supervisor and main control room journals.

Contrary to the above, on September 6, 1996, no entry was made in the shift supervisor's journal for an abnormal condition, when suppression pool level exceeded the technical specification limit requiring entry into a limiting condition for an operation action statement.

Background and Reason for Violation

On September 6, 1996, the Primary Containment Emergency Operating Procedure (EOP) was entered at 0623 hours and exited at 0653 hours due to a high suppression pool level. The Technical Specification (TS) Limiting Condition for Operation (LCO) 3.6.2.2 should have been entered during this period. No entry was made in the Shift Supervisors Journal or the Main Control Room Journal as required by Clinton Power Station Procedure 1401.01 for entrance into a short term LCO. The cause for this violation was inattention to detail and lack of rigor in complying with procedures.

Corrective Steps Taken and Results Achieved

Operations Management discussed this event with the operating crew involved and stressed the importance of proper log book entries.

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through training which consisted of the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.

Corrective Steps to Avoid Further Violation

- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. This monitoring includes procedural compliance and adherence. The management monitoring program consists of senior CPS management, senior management from other facilities, INPO members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.
- Human error reduction techniques were provided to site personnel in the form of a seminar. Employees were coached in error-reduction techniques and methods to apply these techniques to help reduce errors.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-10-01f

Restatement of Violation

B. Failure to Follow Procedures

1. Clinton Power Station (CPS) Technical Specification 5.4.1.a requires, in part, that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," states, in part, that the following are typical safety related activities that should be covered by written procedures: shift and relief turnover (Section 1.g); log entries (Section 1.h); changing loads (Section 2.f); fuel storage cooling system (Section 4.k); control room heating and ventilation system (Section 4.s); and loss of coolant (including leak-rate determination (Section 6.a)).

- e. CPS 1401.01 (Rev. 20) "Conduct of Operations," is a procedure required by sections 1.g and 1.h of RG 1.33.

- (4) Section 8.1.6.2.1 of CPS 1401.01 required the Shift Technical Assistant (STA) to assist the shift supervisor in evaluating conditions for possible entry into an emergency classification condition.

Contrary to the above, on September 5, 1996, the STA failed to assist the shift supervisor in evaluating conditions for possible entry into an emergency classification condition.

Background and Reason for Violation

On September 6, 1996, the Shift Technical Advisor (STA) failed to assist the Shift Supervisor (SS) in evaluating plant conditions for possible entry into an emergency classification condition. Specifically, an NRC Inspector requested that the licensee perform the required calculations to determine if the Alert criteria of 50 gallons per minute (GPM) had been exceeded. Only after the inspector's request for this information were the required calculations performed (highest total leakage was 48 GPM). CPS procedure 1401.01, step 8.1.6.2a, states that "during off normal conditions one of the primary duties of the STA is to assist the SS in the identification of the proper Emergency Action Limit classification." The cause for this violation was inattention to detail and lack of rigor in complying with procedures.

Corrective Steps Taken and Results Achieved

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through training which consisted of the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.

Corrective Steps to Avoid Further Violation

- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. This monitoring includes evaluation of whether shift personnel perform their proper roles. The management monitoring program consists of senior CPS management, senior management from other facilities, INPO members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-11-04

Restatement of Violation

E. Failure to Follow Procedures

2. CPS Technical Specification 5.2.2e, "Unit Staff," requires, in part, that administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety-related functions. Controls shall be included in the procedures such that individuals shall be reviewed monthly by the plant manager, or his designee, to ensure that excessive hours have not been assigned.

CPS 1001.10 (Rev. 6), "Control of Working Hours," Step 8.7, which implements the overtime control and review requirements of Technical Specification Section 5.2.2e, requires that individual overtime records shall be reviewed at least monthly by department management to ensure that excessive hours have not been assigned, and to ensure that overtime limits have not been exceeded without prior authorization.

Contrary to the above, during the period from April 1996 through August 1996, the required reviews of overtime usage by the Operations Department personnel were not performed.

Background and Reason for Violation

Clinton Power Station (CPS) Technical Specifications (TS) states, "Controls shall be included in the procedures such that individuals overtime shall be reviewed monthly by the Plant Manager, or his designee, to ensure that excessive hours have not been assigned." CPS procedure 1001.10 step 8.7 requires at least a monthly review of individual overtime records by departmental management. A note in CPS procedure 1001.10 allows a group supervisor's review/approval of bi-monthly time control reports as a means of satisfying this overtime record review requirement. NRC inspectors interviewed departmental managers and determined that most departments were performing a cursory check of bi-monthly time control reports to verify that individuals had not exceeded working hour limits. These interviews determined that the operations department was not reviewing overtime records for operations personnel. The cause for this violation was inattention to detail and lack of rigor in complying with procedures.

Corrective Steps Taken and Results Achieved

The individual responsible for the review of overtime records was made aware of the review requirements. In addition, the Operations Department initiated a recurring Centralized Commitment Tracking (CCT) item to provide a reminder to perform overtime reviews.

Corrective Steps to Avoid Further Violation

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through training which consisted of the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.
- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. This program includes monitoring the effective use of overtime in the Operations Department. The management monitoring program consists of senior CPS management, senior management from other facilities, INPO members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 9C-11-02

Restatement of Violation

B. Failure to Follow Procedures

3. 10 CFR 50.54(m)(2)(iii) states that when a nuclear power unit is in an operational mode other than cold shutdown or refueling, as defined by the unit's technical specifications, such licensees shall have a person holding a senior operator license of the nuclear power unit in the control room at all times. In addition to this senior operator, for each fuel nuclear power unit, a licensed operator or senior operator shall be present at the controls at all times.

CPS 1001.05 (Rev. 8) "Authorities and Responsibilities of Reactor Operators for Safe Operation and Shutdown," which implements the requirements of 10CFR 50.54(m)(2)(iii) at Section 2.1.2, defines the "A" reactor operator (RO) as the licensed RO present "at the controls" of a fueled nuclear power unit.

Contrary to the above, on September 18, 1996, with the reactor fueled, the "A" RO left the "at the controls" area for approximately 3 minutes without obtaining an appropriate relief.

Background and Reason for Violation

On September 18, 1996, the "A" Reactor Operator (RO), designated to be the "at the controls RO," left the area designated by 1001.05 as the "at the controls" portion of the control room for approximately three minutes without informing the other control room operators, without conducting a turnover, and without obtaining appropriate relief. The Line Assistant Shift Supervisor and the "B" RO were in the controls area, but were not actually monitoring the designated "at the controls" panel (P680). The cause for this violation was inattention to detail and lack of rigor in complying with procedures.

Corrective Steps Taken and Results Achieved

All personnel involved in this event were interviewed and counseled by the Shift Supervisor. The "A" RO was also counseled by the Assistant Plant Manager of Operations and the Plant Manager. This included an emphasis on the responsibilities of the licensed operator at the controls, 10 CFR 50.54 (m)(2)(iii) requirements, proper interim watch turnover and the use of three part communication. Expectations on procedure compliance and the use of three part communication were strengthened in the Operations Department. Additional guidance to reinforce proper briefings prior to

turnover of watchstation duties, including short term relief, were provide in CPS procedure 1401.01, revision 25.

Corrective Steps to Avoid Further Violation

Expectations on procedure compliance were strengthened and guidance was provided to all on-shift active licensed and non-licensed personnel. This was accomplished through training which consisted of the following series of seminars:

- Reactor Recirculation Pump Seal failure event conducted by the Assistant Plant Manager Operations.
- Lessons learned from the pump seal failure event conducted by the Shift Supervisor involved in the event.
- Procedural Compliance and Adherence Training on 10CFR50, Appendix B, Criteria V.
- Conservative decision making presented by each crew's Shift Supervisor.
- Management oversight and roles conducted by the Plant Manager.
- CPS Operations has implemented a management monitoring program (In Plant Crew Observation and Monitoring Program) to ensure and enforce management expectations on procedural adherence and conservative decision making. This program includes monitoring of whether operating crew personnel properly fulfill their on-shift roles. The management monitoring program consists of senior CPS management, senior management from other facilities, INPO members, and additional nuclear program personnel. This program will last through the end of 1997 and then be reevaluated for effectiveness and continued implementation.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-12-01

Restatement of Violation

B. Failure to Follow Procedures

4. Clinton Power Station Technical Specification 5.4.1.a requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

a. Section 7(e)(1) of Appendix A to RG 1.33, requires a radiation protection (RP) procedure for access control to radiation areas including a Radiation Work Permit system.

Station Procedure No. 1905.10 (Rev. 17), "Radiation Work Permit," implemented the requirement of Section 7(e)(1) of Appendix A to RG 1.33 and stated at step 6.2 that deviations from a Radiological Safety Work Plan (RSWP) are not permitted without the approval of the Supervisor-Radiological Operations.

RSWP 96-01 (Rev. 1), states:

- If an extended time window (12 hours minimum) exists in which no irradiated core components or fuel movements are to occur, the requirements of this RSWP may be relaxed (Section C(2));
- If the RSWP is temporarily suspended, the restricted area posting on the drywell 790' elevation and the notification posting restricting access to the drywell 767' elevation shall be removed and the dropped fuel bundle warning system shall be placed in standby (Section II(a)).

Contrary to the above, on November 14, 1996, workers were allowed to enter the 796' elevation of the drywell under the following deviations from RWSP 96-01 that had not been approved by the Supervisor-Radiological Operations:

- i. Fuel movement was suspended for a maximum 8 hour period and not for the minimum 12 hour period specified in section C(2) of RWSP 96-01 prior to the entry.
- ii. The restricted area posting on the drywell 790' elevation and the notification posting restricting access to the drywell 767' elevation were not removed, and the dropped fuel bundle warning system was not placed in standby prior to suspension of RSWP 96-01 as specified in section II(a) of RSWP 96-01.

Background and Reason for Violation

In order to ensure personnel working in the upper elevation of the drywell were adequately briefed on the potential effects of a dropped fuel bundle a Radiological Safety Work Plan (RSWP) was put in place. While in effect, the RSWP restricted access to above the 790' elevation to the drywell. On November 11, 1996, outage management personnel in the Outage Control Center (OCC) and the Shift Supervisor verbally agreed to ensure suspended core alterations remained in effect while craft personnel entered above the 790' elevation of the drywell. Irradiated fuel movement had been suspended for approximately six and one half hours. In addition, The Shift Outage Manager (SOM) conferred with the Senior Reactor Operator in charge of refueling operations to ensure that no core alterations would take place until authorized by the SOM and Shift Supervisor. The SOM then contacted the drywell Control Point Radiation Protection Technician (RPT) directly and informed him that core alterations had been suspended and to allow workers to proceed to above the 790' elevation of the Drywell while irradiated fuel movement activities were suspended. Based upon the phone call from the SOM, the workers were authorized access by the RPT. However, the RSWP had not been suspended; therefore, entry above the 790' elevation of the Drywell was in violation of station procedure CPS No. 1905.10.

The cause for this event was the RSWP did not clearly communicate its intent regarding restricting work above the 790' elevation of the Drywell. The drywell control point RPT and the SOM did not understand that entry above the 790' elevation while the RSWP was in effect was prohibited even though irradiated fuel movement was suspended. Ineffective communication between outage management and radiological operations personnel also contributed to this event.

Corrective Steps Taken and Results Achieved

The Supervisor-Radiological Operations (S-RO) directed the workers above the 790' elevation to be escorted out of the drywell by Radiological Operations personnel. Written communication providing clarification and direction to the Radiation Protection Shift Supervisors (RPSS) and Radiation Protection Technicians (RPT) regarding not allowing direction of radiological work to come from anyone other than the RPSS was provided by the designated Radiation Protection Manager. The drywell RPSSs, Lead RPTs at the drywell control point, and Shift Outage Managers were briefed on the restriction for entry above 790' elevation in the Drywell with the RSWP in effect. The RSWP was revised providing clearer expectations regarding work in the upper drywell during irradiated component handling, including the proper protocol for suspension. All personnel that make decisions affecting the implementation of the RSWP were briefed on the revision. A memo from the Radiation Protection Manager was issued to all Shift Supervisors, Directors, Outage Management personnel, CPS Supervisors, and RF-6 Task Managers delineating the responsibilities and authority of the RPSSs in radiological decisions involving radiation safety and ALARA.

Corrective Steps to Avoid Further Violation

An additional briefing on the upper drywell RSWP requirements will be provided to Task Managers and supervisors of individuals working in the upper drywell prior to the next refueling outage. The station procedure on Radiological Safety Work Plans will be reviewed for enhancements to address the differences of controlling work in the upper elevation of the drywell versus other typical tasks performed under an RSWP by July 15, 1998.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-12-06[a]

Restatement of Violation

B. Failure to Follow Procedures

4. Clinton Power Station Technical Specification 5.4.1.a requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.
 - b. Section 7(e)(7) of Appendix A to RG 1.33 requires a radiation protection (RP) procedure for Personnel Monitoring.

Station Procedure No. 1032.02 (Rev. 23), "Security Access Control," implemented Section 7(e)(7) of Appendix A to RG 1.33 and required at Step 8.8.2 that an individual remain in the immediate area and contact RP personnel if the individual alarms a radiation portal monitor twice.

Contrary to the above, on December 28, 1996, and on January 7, 1997, a records supervisor and auxiliary operator, respectively, exited the plant after twice alarming the gatehouse radiation portal monitor and without contacting RP personnel as specified at Step 8.8.2 of Station Procedure No. 1032.02.

Background and Reason for Violation

On December 27, 1996, and January 7, 1997, workers improperly processed through the Gamma-10 portal radiation monitors. These acts constituted a violation of station procedure CPS No. 1032.02 step 8.8.2. The cause for this violation was vague expectations on procedural compliance and lack of rigor in complying with procedures. Contributing factors include lack of strong line accountability in overseeing Radiological Worker performance and rationalizing away the importance of contamination monitor alarms due to an on-going radon problem. This radon problem, causing numerous alarms due to its decay process, has created an atmosphere where some individual rationalize away alarms as a 'radon' event and do not notify Radiation Protection personnel. In addition, poor radiological worker performance was not sufficiently visible to the line organization.

Corrective Steps Taken and Results Achieved

The individuals were counseled by management. Elements of this briefing included notifying Radiation Protection any time two consecutive alarms are received as required by procedure and assuring valid results when processing through Gamma-10's. Specific criteria was developed, and promulgated to site personnel, in which a Condition Report would be written to document poor radworker performance events and increase site awareness to radiological issues. Monitoring of Radiological Worker exit processing performance was increased by Radiological Operations personnel. Several PCM2s were recently acquired to provide additional monitoring capabilities to reduce the occurrence of alarms attributed to radon daughter products.

Corrective Steps to Avoid Further Violation

Self assessment activities conducted by line organizations will be strengthened to incorporate adherence to radiological requirements by September 30, 1997. This will be accomplished by Radiation Protection personnel assisting in the development of, or revision to, self-assessment items to be observed. By November 1997, Radiological Worker requirements will be consolidated into a clear series of Radiological Worker procedures. Important radiological topics are being periodically presented to CPS management at the monthly Nuclear Program Status Meetings.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-12-06[b]

Restatement of Violation

B. Failure to Follow Procedures

4. Clinton Power Station Technical Specification 5.4.1.a requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

c. Section 7(e)(1) of Appendix A to RG 1.33 requires a radiation protection (RP) procedure for access control to radiation areas.

Station Procedure 1024.02 (Rev. 4) "Radiological Work Control," implemented Section 7(e)(7) of Appendix A to RG 1.33 and required at Step 6.1.1 that workers adhere to established RP control requirements unless issued written or verbal guidance from RP personnel.

RP control requirements contained specific prohibitions against eating, drinking and smoking in the Radiological Controlled Area (RCA) were posted at various locations in the plant, communicated during Nuclear General Employee Training (NGET) and were listed on page 15 of the refueling outage (RF-6) handbook distributed to all personnel. Also during NGET workers were instructed on the proper radiological controls which shall be used during ingress/egress to/from a contaminated area including removing protective clothing when exiting contaminated areas.

i. Contrary to the above, on November 22, 1996, the licensee identified that an unapproved sleeping/smoking area had been set up inside the Radiological Controlled Area (730' elevation of the radiological waste building), comprising of three sleeping places and used (freshly smoked) cigarette butts.

Background and Reason for Violation

Evidence of a sleeping area, with fresh cigarette butts, was found in a remote area of the Radiological Waste (Radwaste) Building by a Fire Protection individual. These acts constituted a violation of CPS requirements governing employee conduct in the RCA. This information was passed to the appropriate level of management to determine the course of action appropriate to identify the individual(s) responsible for this action. This area of the Radwaste Building has radiological conditions consistent with background levels. There are no transfer lines in the immediate area, nor are there any transfer lines which may affect this area. The cause for this violation is personnel misconduct.

Corrective Steps Taken and Results Achieved

The area was monitored by station Quality Assurance personnel. During this observation period, a contract worker was discovered sleeping at the remote location. The individual was denied access to the CPS Protected Area and is not eligible for re-hire. The cigarette butts and bedding material were then removed.

Corrective Steps to Avoid Further Violation

CPS will continue to be diligent in identifying and taking appropriate actions for any similar act.

Date When Full Compliance Will be Achieved

CPS is currently in compliance.

Violation 96-12-06[c]

Restatement of Violation

B. Failure to Follow Procedures

4. Clinton Power Station Technical Specification 5.4.1 a requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

c. Section 7(e)(1) of Appendix A to RG 1.33 requires a radiation protection (RP) procedure for access control to radiation areas.

Station Procedure 1024.02 (Rev. 4) "Radiological Work Control," implemented Section 7(e)(7) of Appendix A to RG 1.33 and required at Step 6.1.1 that workers adhere to established RP control requirements unless issued written or verbal guidance from RP personnel.

RP control requirements contained specific prohibitions against eating, drinking and smoking in the Radiological Controlled Area (RCA) were posted at various locations in the plant, communicated during Nuclear General Employee Training (NGET) and were listed on page 15 of the refueling outage (RF-6) handbook distributed to all personnel. Also during NGET workers were instructed on the proper radiological controls which shall be used during ingress/egress to/from a contaminated area including removing protective clothing when exiting contaminated areas.

ii. Contrary to the above, on January 7, 1997, a worker exited a posted contaminated area prior to removing his protective clothing.

Background and Reason for Violation

An individual was observed by a Radiation Protection Technician (RPT) exiting a Contamination Area (CA) without removing his protective clothing. The individual had entered the CA to access the Auxiliary Building Steam Tunnel. This individual was unaware that a key to the door, maintained by Security Force personnel, was needed to unlock a door in able to gain access to the area.

When the individual encountered the locked door and realized a key was needed, he proceeded to a phone to call for the key. This phone was located just outside the CA. When questioned, the individual stated that he had not seen the step-off pad. The cause for this event is personnel error. Contributing factors to this lack of sensitivity to radiological requirements include lack of strong line accountability in overseeing Radiological Worker performance and poor radiological worker performance not sufficiently visible to the line organization.

Corrective Steps Taken and Results Achieved

A survey of the area was performed to verify that radioactive contamination was not spread outside the CA. No radioactive contamination outside the CA was found. The individual was counseled by Radiation Protection personnel and management concerning proper contamination control practices associated with exiting a CA. Specific criteria was developed, and promulgated to site personnel, in which a Condition Report would be written to document poor radworker performance events and increase site awareness to radiological issues.

Corrective Steps to Avoid Further Violation

Self assessment activities conducted by line organizations will be strengthened to incorporate adherence to radiological requirements by September 30, 1997. This will be accomplished by Radiation Protection personnel assisting in the development of, or revision to, self-assessment items to be observed. By November 1997, Radiological Worker requirements will be consolidated into a clear series of Radiological Worker procedures. Important radiological topics are being periodically presented to CPS management at the monthly Nuclear Program Status Meetings.

Date When Full Compliance Will be Achieved

CPS is currently in compliance.

Violation 96-12-03

Restatement of Violation

B. Failure to Follow Procedures

4. Clinton Power Station Technical Specification 5.4.1.a requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.
 - d. Section 7(b)(1) of Appendix A to RG 1.33 requires procedures for limiting the release of solid radioactive waste material such as spent resin and filter sludge to the environment.

Procedure STD-P-03-028 (Rev. 1), "Waste sluicing Procedure" was written to implement Section 7(b)(1) of Appendix A to RG 1.33.

Contrary to the above, on January 7, 1997, procedure STD-P-03-028 was found to be inadequate because it did not describe the vent path for the waste evaporator tank used during the sludge sluicing and did not describe the actual sluicing wand used during the job. The result of following this inadequate procedure, was the spread of radioactive material and the contamination of several workers when they disconnected a pressurized sludge hose.

Background and Reason for Violation

During the sluicing of radioactive contaminated sediment from a 55-gallon drum to a High Integrity Container (HIC) setup for radioactive waste processing, the transfer hose at the pump discharge became clogged. During troubleshooting, valves were cycled at the HIC and pump discharge to attempt to vent the line. Pump discharge pressure at a local gage was observed to decrease and the air motive force for the pump was vented. Upon completion of these actions, personnel involved with the task believed the hose had been depressurized. The hose was successfully disconnected at the end attached to the HIC without incident. When personnel attempted to disconnect the second hose-end at the pump discharge however, they found the hose to be still pressurized. Three individuals were sprayed, contaminating them and the area with radioactive contamination. A hose blockage had occurred in the discharge line between the pump and the HIC. An effective way to vent the pump discharge end of the hose did not exist. The root or overall cause

of this event was ineffective management of the work process. Specifically, oversight and control of the vendor activities had been allowed to decline over a period of time. This lack of active oversight and control led to the deficiencies in the equipment and procedures related to the configuration for sluicing activities. Further, neither the procedure, nor the pre-job briefing, adequately addressed venting lines or the actions to be taken for potential problems that were inherent given the type of material being sluiced. Finally, the Radiation Protection Technician (RPT) became involved in the troubleshooting activities and failed to stop work and notify appropriate supervision. The Radiation Protection Technician failed to maintain an oversight role in the activity being performed.

Corrective Steps Taken and Results Achieved

Radioactive decontamination was performed on all three workers. A dose assessment on the contaminated individuals determined that each received less than 10 mrem both internally and externally (skin). The affected area was surveyed and posted as a Contamination Area. The area was subsequently decontaminated and released from a Contamination Area. A hold was placed on all sluicing operations pending a review of the circumstances and corrective actions. The equipment was disassembled and inspected to confirm the cause and equipment condition. Where necessary, new parts were replaced to improve material condition of the vendor equipment. Pressure gauges were placed into the plant calibration program to improve maintenance of them. A sluice wand that matches the vendor procedure drawing was obtained.

Corrective Steps to Avoid Further Violation

The RPT and vendor were counseled on management's expectation regarding notifications when problems occur during task execution. Radiological Programs personnel attended an error prevention training seminar given by Performance Improvement International. An additional vent path was added at the discharge of the waste pump for better depressurization capabilities. Appropriate vendor procedures were reviewed and revised to include radiological hold points and contingencies for hose blockage. This revision included a review by the Radiation Protection Department. Vendor procedures were made subject to a biennial review requirement assuring they are kept current with station program requirements. A pre-job briefing sheet for containerized material processing was prepared that includes stopping work and notifying supervision when problems are encountered. The circumstances from this event were applied to other existing vendor wet waste processing configurations to prevent a similar event from occurring.

Date When Full Compliance Will be Achieved

CPS is currently in compliance.

Violation 96-12-02

Restatement of Violation

B. Failure to Follow Procedures

4. Clinton Power Station Technical Specification 5.4.1.a requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

e. 10 CFR 20.1501 requires, in part, that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present.

10CFR 20.1701 requires, in part, that the licensee shall use, to the extent practical, process or other engineering controls to control the concentrations of radioactive material in air.

Pursuant to 10CFR 20.1003, survey means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation.

i. Contrary to the above, on January 7, 1997, the licensee's evaluation failed to adequately evaluate the radiological conditions and potential radiological hazards present, or use appropriate engineering controls to control the concentrations of radioactive material in air, prior to disconnecting a hose which had become clogged during the transfer of radioactive material.

Background and Reason for Violation

During the sluicing of contaminated sediment from a 55-gallon drum to a High Integrity Container (HIC) setup for radioactive was processing, the transfer hose at the pump discharge became clogged. During troubleshooting, valves were cycled at the HIC and pump discharge to attempt to vent the line. Pump discharge pressure at a local gage was

observed to decrease and the air motive force for the pump was vented. Upon completion of these actions, personnel involved with the task believed the hose had been depressurized. The hose was successfully disconnected at the end attached to the HIC without incident. When personnel attempted to disconnect the second hose-end at the pump discharge however, they found the hose to be still pressurized. Three individuals were sprayed, radioactively contaminating them and the area. A hose blockage had occurred in the discharge line between the pump and the HIC. An effective way to vent the pump discharge end of the hose did not exist. The root or overall cause of this event was ineffective management of the work process. Specifically, oversight and control of the vendor activities had been allowed to decline over a period of time symptomatic of the station's problem in general. This lack of active oversight and control led to the deficiencies in the equipment and procedures related to the configuration for sluicing activities. Further, neither the procedure, nor the pre-job briefing, adequately addressed venting lines or the actions to be taken for potential problems that were inherent given the type of material being sluiced. Finally, the Radiation Protection Technical (RPT) became involved in the troubleshooting activities and failed to stop work and notify appropriate supervision. The Radiation Protection Technician failed to maintain an oversight role in the activity being performed.

Corrective Steps Taken and Results Achieved

Radioactive decontamination was performed on all three workers. A dose assessment on the contaminated individuals determined that each received less than 10 mrem both internally and externally (skin). The affected area was surveyed and posted as a Contamination Area. The area was subsequently decontaminated and released from a Contamination Area. A hold was placed on all sluicing operations pending a review of the circumstances and corrective actions. The equipment was disassembled and inspected to confirm the cause and equipment condition. Where necessary new parts were replaced to improve material condition of the vendor equipment. Pressure gauges were placed into the plant calibration program to improve maintenance of them. A sluice wand that matches the vendor procedure drawing was obtained.

Corrective Steps to Avoid Further Violation

The RPT and vendor were counseled on management's expectation regarding notifications when problems occur during task execution. Radiological Programs personnel attended an error prevention training seminar given by Performance Improvement International. An additional vent path was added at the discharge of the waste pump for better depressurization capabilities. Appropriate vendor procedures were reviewed and revised to include radiological hold points and contingencies for hose blockage. This revision included a review by the Radiation Protection Department. Vendor procedures were made subject to a biennial review requirement assuring they are kept current with station program requirements. A pre-job briefing sheet for containerized material processing was prepared that includes stopping work and notifying supervision when problems are

encountered. The circumstances from this event were applied to other existing vendor wet waste processing configurations to prevent a similar event from occurring.

Date When Full Compliance Will be Achieved

CPS is currently in compliance.

Violation 96-12-04

Restatement of Violation

B. Failure to Follow Procedures

4. Clinton Power Station Technical Specification 5.4.1 a requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978.

e. 10 CFR 20.1501 requires, in part, that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present.

10CFR 20.1701 requires, in part, that the licensee shall use, to the extent practical, process or other engineering controls to control the concentrations of radioactive material in air.

Pursuant to 10CFR 20.1003, survey means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation.

ii. Contrary to the above, on January 3, 1997, the licensee's evaluation failed to adequately evaluate the radiological conditions and potential radiological hazards present, or use appropriate engineering controls, during the removal of mirror insulation from reactor water cleanup system piping.

Background and Reason for Violation

On January 3, 1997, four workers were slightly radioactively contaminated and low level radioactive contamination was spread outside a Contamination Area while mirror insulation was being removed from Reactor Water Cleanup (RT) Piping in the 'B' RT Heat Exchanger Room (located in the Containment Building). The cause for this event is attributed to inadequate implementation of engineering controls. Maximum radioactive contamination levels at which the job should be stopped and re-evaluated and the need to

wet the insulation were identified in the Respiratory Protection Evaluation data sheet, and stated in the pre-job briefing. However, these requirements were not incorporated into the Radiation Work Permit for this task. Finally, several impacts affecting ventilation in the area caused the RT Heat Exchange Room to be at a slightly higher pressure than outside the room which resulted in the spread of a small amount of radioactive contamination to a non-contaminated area. These impacts were the 828' refueling floor being covered (the refuel floor has a large amount of grating required to be covered to prevent the spread of radioactive contamination to lower elevations of the Containment building during refueling activities) and the Containment Building Equipment Hatch being removed (removal of the Containment Building and Drywell Equipment Hatches are required for access to the Drywell).

Corrective Steps Taken and Results Achieved

The four workers were decontaminated. The affected area outside the room was surveyed and posted as a Contamination Area (and was subsequently decontaminated and released from a Contamination Area). A Radiation Work Permit (RWP) Initiation Checklist was implemented which requires plant ventilation needs and respirator protection evaluation requirements (from the Respiratory Protection Evaluation data sheet) to be addressed directly in the RWP. The Radiation Protection Work Instruction which implements this checklist was also revised to assure conservative decision making attributes were considered in RWP development. Briefings conducted on RWP requirements were strengthened through the use of a briefing checklist.

Corrective Steps to Avoid Further Violation

The radiological systems training lesson plan will be revised to incorporate the effects of refueling activities on overall building ventilation impacts by July 15, 1998.

Date When Full Compliance Will be Achieved

CPS is currently in compliance.

Violation 96-14-01a

Restatement of Violation

C. Inoperable Emergency Diesel Generator

1. Technical Specification Limiting Condition for Operation (LCO) 3.8.1 requires that three diesel generators be operable. The LCO is applicable during Modes 1, 2, and 3 of operation.

Technical Specification Surveillance Requirement (SR) 3.8.1.11.c.1 requires that once every eighteen months it be verified that on an actual or simulated loss of offsite power signal each emergency diesel generator energizes permanently connected loads in < 12 seconds. Licensee Procedure CPS 9080.23, "Diesel Generator 1C Integrated," was intended to satisfy this SR.

SR 3.0.1 states, in part, that "failure to meet a SR, whether such failure is experienced during performance of the SR or between performances of the SR, shall be failure to meet the LCO."

Contrary to the above, from September 26, 1995, until November 5, 1996, Diesel Generator 1C was inoperable in that SR 3.8.1.11.c.1 could not be satisfied. On September 26, 1995, the licensee miscalibrated relay K54X. The miscalibration directly caused, on November 2, 1996, the inability of Diesel Generator 1C to satisfy SR 3.8.1.11.c.1 in that it could not be demonstrated that permanently connected loads were energized in less than 12 seconds. As demonstrated through the performance of Procedure CPS 9080.23, loads were not energized until 20 seconds after receipt of the actuation signal.

Background and Reason for Violation

During the Division 3 emergency diesel generator (DG) integrated surveillance test (CPS 9080.23), operations personnel identified that the Division 3 DG did not energize the Division 3 emergency bus within 12 seconds or less as required by Technical Specification Surveillance Requirement (TS SR) 3.8.1.11.c.1. CR 1-96-11-039 was subsequently initiated to investigate the cause of this condition. Investigation found that the DG failed its surveillance because time delay relay K54x, the voltage permissive relay for the Division 3 DG breaker, had been re-calibrated using incorrect data. The cause of this violation is personnel error involving a misinterpretation of setpoint data provided on drawing E02-1HP99; sheet 202, for relay K54x. A poor quality drawing reproduction, and lack of rigor during the engineering review of the relay's Preventive Maintenance (PM) instructions further complicated interpretation of setpoint data. Another

contributing factor in this event was that plant maintenance personnel failed to identify and take action on a substantial difference between the as found and as left setpoints for the K54x relay while performing the PM task. The as found data was 0.55 seconds while the incorrect data in the K54x calibration sheet called for the relay to be set to 12.75 seconds plus or minus 2.25 seconds.

Corrective Steps Taken and Results Achieved

The K54x relay was re-calibrated to the correct setpoint value and another integrated surveillance test was performed which verified operability of the Division 3 DG. The E02-1HP99 drawing was improved by adding a note that clearly references the setpoint for relay K54x. Seven other relays calibrated under the same activity were reviewed and no items impacting operability of the Division 3 DG were found.

Corrective Steps to Avoid further Violation

Out of tolerance conditions found during calibration of safety-related electrical instruments/devices will be documented on condition reports until failure coding/trending is demonstrated to be adequate to address those conditions. The Nuclear Station Engineering Department performed a series of lessons learned briefings by the individuals involved to heighten the need for technical rigor and conservative decision making.

Date When Full Compliance Will be Achieved

CPS is currently in compliance.

Violation 96-14-01b

Restatement of Violation

C. Inoperable Emergency Diesel Generator

2. 10 CFR Part 50, Appendix B, Criterion III, "Design Control," states, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions.

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions" states, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Contrary to the above, on August 1, 1995, the licensee failed to correctly translate the design basis for the closing time of Diesel Generator 1C output breaker when the preventative maintenance task evaluation request sheet PEMDGM025 to calibrate relay K54X, "Permissive Signal for Closure of the Division III EDG Output Breaker" was issued. Specifically, the licensee incorporated the wrong delay time in PEMDGM025 which directly caused the closure time of Diesel Generator 1C output breaker to be in noncompliance with Technical Specifications. On September 26, 1995, the licensee failed to identify and correct a condition adverse to quality when workers found a substantial discrepancy between the as-found set point of .55 seconds and as-left setpoint (specified in PEMDGM025) of 11.28 seconds for the K54X relay. The licensee's failure to properly translate design requirements into working instructions (PEMDGM025), and the failure to both identify as a nonconformance and take corrective actions for the substantial difference between the as found and as left setpoints for the K54X relay contributed to Diesel Generator 1C being inoperable from September 26, 1995, to November 5, 1996, as described in violation C.1.

Background and Reason for Violation

During the Division 3 emergency diesel generator (DG) integrated surveillance test (CPS 9080.23), operations personnel identified that the Division 3 DG did not energize the Division 3 emergency bus within 12 seconds or less as required by Technical Specification Surveillance Requirement (TS SR) 3.8.1.11.c.1. CR 1-96-11-039 was subsequently

initiated to investigate the cause of this condition. Investigation found that the DG failed its surveillance because time delay relay K54x, the voltage permissive for the closure of the Division 3 DG breaker had been re-calibrated using incorrect data. During preparation of the PM task for calibration of the auxiliary timing relays on the Division 3 DG, the setpoint data on drawing E02-1HP99-202 for relay K54x was misinterpreted. This personnel error was compounded by poor quality drawing reproduction and lack of rigor during the engineering review of the relay PM instructions. Another contributing factor in this event was that plant maintenance failed to identify and take action on a substantial difference between the as found and as left setpoints for the K54x relay while performing the PM task. The as found data was 0.55 seconds and the incorrect data in the K54x calibration sheet called for the relay to be set to 12.75 seconds plus or minus 2.25 seconds.

Corrective Steps Taken and Results Achieved

The K54x relay was re-calibrated to the correct setpoint value and another integrated surveillance test was performed on Division 3 DG to verify operability. Operability on the Division 3 DG was confirmed. The calibration sheet for the PM task on K54x was updated to reflect the correct time interval. The E02-1HP99 drawing was improved by adding a note that clearly references the setpoint for relay K54x. Seven other relays calibrated under the same activity were reviewed and no items impacting operability of the Division 3 DG were identified.

Corrective Steps to Avoid Further Violation

Out of tolerance conditions found during calibration of safety-related electrical instrument and devices will be documented on condition reports until failure coding and trending is demonstrated to be adequate to address those conditions. The Nuclear Station Engineering Department performed a series of lessons learned briefings by the individuals involved to heighten the need for technical rigor and conservative decision making.

Date When Full Compliance Will be Achieved

CPS is currently in compliance.

Violation 96-11-05d

Restatement of Violation

D Failure to Perform Safety Evaluations

1. 10 CFR 50.59(a)(1), "Changes, Tests and Experiments," states, in part, that the holder of a license authorizing operation of a utilization facility may make changes to the facility as described in the safety analysis report and conduct tests or experiments not described in the safety analysis report, without prior Commission approval, unless the proposed change, test or experiment involves a change in the technical specifications incorporated in the license or an unreviewed safety question.

10 CFR 50.59(b)(1) requires, in part, that the licensee shall maintain records of changes in the facility made pursuant to this section, to the extent that these changes constitute changes in the facility as described in the safety analysis report. The licensees shall also maintain records of tests carried out pursuant to paragraph (a) of 10 CFR 50.59. These records must include a written safety evaluation which provides the bases for the determination that the test does not involve an unreviewed safety question.

The applicable sections of the Updated Safety Analysis Report (USAR) include Figure 9.1-4, which shows the piping configuration for the spent fuel pool cooling system and provided the system configuration for an idle spent pool cooling loop; Section 5.4.7, which describes the design and functional basis of the Residual Heat Removal System (RHR); and Section 3.9.4, which describes the control rod drive system.

- a. Contrary to the above, from 1989 until October 1996, the licensee had operated the fuel pool cooling and cleanup system, as prescribed in CPS 3317.01 (Rev. 16) at step 8.1.1.6 with a valve line up different from that shown on USAR Figure 9.1-4 and a written safety evaluation had not been performed to determine that the change to the system configuration specified in the USAR did not involve an unreviewed safety question. Specifically, the procedure required fuel pool cooling pump valve 1FC011A or B, for the idle loop, to be open, not closed as prescribed in Figure 9.1-4.

Background and Reason for Violation

In December 1988, Clinton Power Station (CPS) procedure 3317.0, "Fuel Pool Cooling and Cleanup (FC)," was revised to allow both Fuel Pool Cooling and Cleanup (FC) pump suction valves, 1FC011A and 1FC011B, to be open during normal operation. The Updated Safety Analysis Report (USAR) Figure 9.1-4 indicated a normal valve lineup for the idle FC train with the suction valve closed. This is contrary to the procedure revision. A written safety evaluation was not performed for the procedure revision deviating from the requirements in the USAR. The cause for this violation was lack of sensitivity to safety evaluation program requirements. The individual performing the procedure change lacked knowledge and showed poor judgment believing that a safety evaluation was not warranted for this system lineup change.

Corrective Steps Taken and Results Achieved

CPS procedure 3317.01 was revised to require the pump suction valve for the idle FC pump to be closed as indicated in the USAR.

Corrective Steps to Avoid Further Violation

A revision to CPS procedure 1005.06, "Conduct of Safety Reviews," was performed to implement improvements in the CPS safety evaluation program. This revision instituted the requirements of the Core Review Group concept. The Core Review Group is a dedicated group of trained individuals who are responsible for reviewing safety evaluations and screenings. Previously any other safety evaluation qualified individual could perform this function. The Core Review Group was established to provide consistency, feedback, and challenge the safety evaluation process. CPS procedure 1005.06 previously allowed making changes to the USAR without using the safety evaluation process through the field configuration change (FCC) process. All FCC's now require a safety evaluation if a USAR change is involved. This change ensures that all FCC's receive the proper review before a change is made.

Training was given to site personnel in January 1997, to ensure awareness and proper implementation of the safety evaluation program. Approximately 300 people on site received training on the purpose, process and applicability of the 50.59 safety evaluation program. Documented justification for changes that do not require a safety evaluation was also discussed in detail during this course. A seminar on lessons learned and enhancements to the CPS safety evaluation program was also given to preparers of screenings and evaluations. This seminar addressed the adverse trend in the safety evaluation program, discussed specific events where the CPS safety evaluation process was not used or improperly used, and discussed the changes to the CPS safety evaluation program that correct the deficiencies in the program. A training course was developed and given to the Core Review Group, consisting of experienced individuals. This course focused on thoroughness, conservatism and compliance required during the review of safety evaluations and screenings.

A Long-Term Improvement Plan has been developed to ensure that the CPS safety evaluation process changes implemented are effective. The Long-Term Improvement Plan includes the establishment of performance measures for trending purposes. Periodic monitoring of the CPS safety evaluation process will be performed to verify the effectiveness of the changes. This will be accomplished through self assessments and audits. CPS procedure 1005.06 will be revised as necessary to incorporate assessment results. Finally, an Independent Assessment Group was developed to perform root cause analysis on conditions adverse to quality. This group has completed a root cause investigation and provided input for further improvements.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-11-03h

Restatement of Violation

D. Failure to Perform Safety Evaluations

1. 10 CFR 50.59(a)(1), "Changes, Tests and Experiments," states, in part, that the holder of a license authorizing operation of a utilization facility may make changes to the facility as described in the safety analysis report and conduct tests or experiments not described in the safety analysis report, without prior Commission approval, unless the proposed change, test or experiment involves a change in the technical specifications incorporated in the license or an unreviewed safety question.

10 CFR 50.59(b)(1) requires, in part, that the licensee shall maintain records of changes in the facility made pursuant to this section, to the extent that these changes constitute changes in the facility as described in the safety analysis report. The licensees shall also maintain records of tests carried out pursuant to paragraph (a) of 10 CFR 50.59. These records must include a written safety evaluation which provides the bases for the determination that the test does not involve an unreviewed safety question.

The applicable sections of the Updated Safety Analysis Report (USAR) include Figure 9.1-4, which shows the piping configuration for the spent fuel pool cooling system and provided the system configuration for an idle spent pool cooling loop; Section 5.4.7, which describes the design and functional basis of the Residual Heat Removal System (RHR); and Section 3.9.4, which describes the control rod drive system.

- b. Contrary to the above, on August 1, 1996, the licensee performed a test that was not described in the safety analysis report, to verify that there was no negative impact on RHR system (Section 5.4.7 of the USAR) when cycled condensate to the containment was isolated. The test was performed without performing a written safety evaluation to determine that the test did not involve an unreviewed safety question.

Background and Reason for Violation

On August 1, 1996, a test was performed to verify the impact on the Residual Heat Removal (RHR) system when a portion of the Cycled Condensate (CY) system to the Containment was isolated. The system engineer generated an action plan in accordance with Nuclear Station Engineering Department (NSED) procedure A.16, "Action Plans," to accomplish the said test. The engineer expected the Operations Department to follow

their own procedures to the extent necessary to accomplish the task. The action plan did not contain a list of procedures to be used in carrying out the test. The safety evaluation process was bypassed because the engineer considered that the action plan did not change the facility, change the USAR, change a procedure described in the USAR or change the Technical Specifications. Because this was a test not described in the USAR, a safety evaluation should have been performed to determine whether implementation of the test involved an unreviewed safety question. The cause for this violation was the action plan program was sufficiently vague to leave much to individual interpretation. The user did not perform a required safety evaluation for this test.

Corrective Steps Taken and Results Achieved

Created CPS procedure 1070.01, "Coordination Plans," which does not allow manipulating plant equipment or control work in the field, rather it requires that CPS procedure(s) be referenced or requires the development of a procedure and associated safety evaluation for equipment manipulation. Furthermore, the ability to recognize an activity as a test not described in the USAR was clarified by replacing action plans with coordination plans.

Corrective Steps to Avoid Further Violation

CPS procedure 1070.01, "Coordination Plans," requires a safety evaluation to be performed if equipment manipulation is required and a procedure does not exist. This requirement, along with changes to the safety evaluation program described below, provides the necessary mechanisms to prevent further violation.

A revision to CPS procedure 1005.06, "Conduct of Safety Reviews," was performed to implement improvements in the safety evaluation program. This revision instituted the requirements of the Core Review Group concept. The Core Review Group is a dedicated group of trained individuals who are responsible for reviewing safety evaluations. Previously any other qualified safety evaluation preparer could perform this function. The Core Review Group was established to provide consistency, feedback, and challenge the safety evaluation process.

Training was given to site personnel in January 1997, to ensure awareness and proper implementation of the safety evaluation program. Approximately 300 people on site received training on the purpose, process and applicability of the safety evaluation program. Documented justification for changes that do not require a safety evaluation was also discussed in detail during this course. A seminar on lessons learned and enhancements to the CPS safety evaluation program was also given to preparers of screenings and evaluations. This seminar addressed the adverse trend in the safety evaluation program, discussed specific events where the CPS safety evaluation process was not used or improperly used, and discussed the changes to the CPS safety evaluation program that correct the deficiencies in the program. A training course was developed and given to the Core Review Group, consisting of experienced individuals. This course

focused on thoroughness, conservatism and compliance required during the review of safety evaluations and screenings.

A Long-Term Improvement Plan has been developed to ensure that the safety evaluation process changes implemented are effective. The Long-Term Improvement Plan includes the establishment of performance measures for trending purposes. Periodic monitoring of the safety evaluation process will be performed to verify the effectiveness of the changes. This will be accomplished through self assessments and audits. CPS procedure 1005.06 will be revised as necessary to incorporate assessment results. Finally, an Independent Assessment Group was developed to perform root cause analysis on conditions adverse to quality. This group has completed a root cause investigation and provided input for further improvements.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-11-03i

Restatement of Violation

D. Failure to Perform Safety Evaluations

1. 10 CFR 50.59(a)(1), "Changes, Tests and Experiments," states, in part, that the holder of a license authorizing operation of a utilization facility may make changes to the facility as described in the safety analysis report and conduct tests or experiments not described in the safety analysis report, without prior Commission approval, unless the proposed change, test or experiment involves a change in the technical specifications incorporated in the license or an unreviewed safety question.

10 CFR 50.59(b)(1) requires, in part, that the licensee shall maintain records of changes in the facility made pursuant to this section, to the extent that these changes constitute changes in the facility as described in the safety analysis report. The licensees shall also maintain records of tests carried out pursuant to paragraph (a) of 10 CFR 50.59. These records must include a written safety evaluation which provides the bases for the determination that the test does not involve an unreviewed safety question.

The applicable sections of the Updated Safety Analysis Report (USAR) include Figure 9.1-4, which shows the piping configuration for the spent fuel pool cooling system and provided the system configuration for an idle spent pool cooling loop; Section 5.4.7, which describes the design and functional basis of the Residual Heat Removal System (RHR); and Section 3.9.4, which describes the control rod drive system.

- c. Contrary to the above, on August 1, 1996, the licensee performed a test that was not described in the safety analysis report, to verify functionality of RHR (Section 5.4.7 of the USAR) water leg pump check valve 1E12F085A. The test was performed without performing a written safety evaluation to determine that the test did not involve an unreviewed safety question.

Background and Reason for Violation

On August 1, 1996, a test was performed to determine the impact that isolating Cycled Condensate (CY) to containment would have on the Residual Heat Removal (RHR) system. Specifically it was suspected that the water leg pump discharge check valve (1E12F085A) was sticking shut and affecting the ability of the pump to keep the RHR system filled. The system engineer generated an action plan in accordance with Nuclear Station Engineering Department (NSED) procedure A.16, "Action Plans." The engineer

expected the Operations Department to follow their own procedures to the extent necessary to accomplish the task. The action plan did not contain a list of procedures to be used in carrying out the test. The safety evaluation process was not used because the engineer considered that the plan did not change the facility, change the USAR, change a procedure described in the USAR or change the Technical Specifications. Because this was a test not described in the USAR, a safety evaluation should have been performed to determine whether implementation of the test involved an unreviewed safety question. The cause for this violation was the action plan program was sufficiently vague to leave much to individual interpretation. The user did not perform a required safety evaluation for this test.

Corrective Steps Taken and Results Achieved

Created CPS procedure 1070.01, "Coordination Plans," which does not allow manipulating plant equipment or control work in the field, rather it requires that CPS procedure(s) be referenced or requires the development of a procedure and associated safety evaluation for equipment manipulation. Furthermore, the ability to recognize an activity as a test not described in the USAR was clarified by replacing action plans with coordination plans.

Corrective Steps to Avoid Further Violation

CPS procedure 1070.01, "Coordination Plans," requires a safety evaluation to be performed if equipment manipulation is required and a procedure does not exist. This requirement, along with changes to the safety evaluation program described below, provides the necessary mechanisms to prevent further violation.

A revision to CPS procedure 1005.06, "Conduct of Safety Reviews," was performed to implement improvements in the safety evaluation program. This revision instituted the requirements of the Core Review Group concept. The Core Review Group is a dedicated group of trained individuals who are responsible for reviewing safety evaluations. Previously any other qualified safety evaluation preparer could perform this function. The Core Review Group was established to provide consistency, feedback, and challenge the safety evaluation process.

Training was given to site personnel in January 1997, to ensure awareness and proper implementation of the safety evaluation program. Approximately 300 people on site received training on the purpose, process and applicability of the safety evaluation program. Documented justification for changes that do not require a safety evaluation was also discussed in detail during this course. A seminar on lessons learned and enhancements to the CPS safety evaluation program was also given to preparers of screenings and evaluations. This seminar addressed the adverse trend in the safety evaluation program, discussed specific events where the CPS safety evaluation process was not used or improperly used, and discussed the changes to the CPS safety evaluation program that correct the deficiencies in the program. A training course was developed

and given to the Core Review Group, consisting of experienced individuals. This course focused on thoroughness, conservatism and compliance required during the review of safety evaluations and screenings.

A Long-Term Improvement Plan has been developed to ensure that the safety evaluation process changes implemented are effective. The Long-Term Improvement Plan includes the establishment of performance measures for trending purposes. Periodic monitoring of the safety evaluation process will be performed to verify the effectiveness of the changes. This will be accomplished through self assessments and audits. CPS procedure 1005.06 will be revised as necessary to incorporate assessment results. Finally, an Independent Assessment Group was developed to perform root cause analysis on conditions adverse to quality. This group has completed a root cause investigation and provided input for further improvements.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-11-03j

Restatement of Violation

D. Failure to Perform Safety Evaluations

1. 10 CFR 50.59(a)(1), "Changes, Tests and Experiments," states, in part, that the holder of a license authorizing operation of a utilization facility may make changes to the facility as described in the safety analysis report and conduct tests or experiments not described in the safety analysis report, without prior Commission approval, unless the proposed change, test or experiment involves a change in the technical specifications incorporated in the license or an unreviewed safety question.

10 CFR 50.59(b)(1) requires, in part, that the licensee shall maintain records of changes in the facility made pursuant to this section, to the extent that these changes constitute changes in the facility as described in the safety analysis report. The licensees shall also maintain records of tests carried out pursuant to paragraph (a) of 10 CFR 50.59. These records must include a written safety evaluation which provides the bases for the determination that the test does not involve an unreviewed safety question.

The applicable sections of the Updated Safety Analysis Report (USAR) include Figure 9.1-4, which shows the piping configuration for the spent fuel pool cooling system and provided the system configuration for an idle spent pool cooling loop; Section 5.4.7, which describes the design and functional basis of the Residual Heat Removal System (RHR); and Section 3.9.4, which describes the control rod drive system.

- d. Contrary to the above, between August 2 and September 18, 1996, the licensee performed a weekly test that was not described in the safety analysis report, to verify the operability of RHR (Section 5.4.7 of the USAR) check valve 1E12F085A. The test was performed without performing a written safety evaluation to determine that the test did not involve an unreviewed safety question.

Background and Reason for Violation

On August 1, 1996, a test was performed to determine the operability of the Residual Heat Removal (RHR) water leg pump discharge check valve (1E12F085A). Between August 2, 1996, and September 18, 1996, this test was performed weekly. Specifically it was determined that the water leg pump discharge check valve (1E12F085A) had the potential to stick shut thus affecting the ability of the pump to keep the RHR system filled.

This test was to ensure that 1E12F085A was not sticking shut. The system engineer generated an action plan in accordance with Nuclear Station Engineering Department (NSED) procedure A.16, "Action Plans." The engineer expected the Operations Department to follow their own procedures to the extent necessary to accomplish the task. The action plan did not contain a list of procedures to be used in carrying out the test. The safety evaluation process was not used because the engineer considered that the plan did not change the facility, change the USAR, change a procedure described in the USAR or change the Technical Specifications. Because this was a test not described in the USAR, a safety evaluation should have been performed to determine whether implementation of the test involved an unreviewed safety question. The cause for this violation was the action plan program was sufficiently vague to leave much to individual interpretation. The user did not perform a required safety evaluation for this test. This test did not involve an unreviewed safety question.

Corrective Steps Taken and Results Achieved

Created CPS procedure 1070.01, "Coordination Plans," which does not allow manipulating plant equipment or control work in the field, rather it requires that CPS procedure(s) be referenced or requires the development of a procedure and associated safety evaluation for equipment manipulation. Furthermore, the ability to recognize an activity as a test not described in the USAR was clarified by replacing action plans with coordination plans.

Corrective Steps to Avoid Further Violation

CPS procedure 1070.01, "Coordination Plans," requires a safety evaluation to be performed if equipment manipulation is required and a procedure does not exist. This requirement, along with changes to the safety evaluation program described below, provides the necessary mechanisms to prevent further violation.

A revision to CPS procedure 1005.06, "Conduct of Safety Reviews," was performed to implement improvements in the safety evaluation program. This revision instituted the requirements of the Core Review Group concept. The Core Review Group is a dedicated group of trained individuals who are responsible for reviewing safety evaluations. Previously any other qualified safety evaluation preparer could perform this function. The Core Review Group was established to provide consistency, feedback, and challenge the safety evaluation process.

Training was given to site personnel in January 1997, to ensure awareness and proper implementation of the safety evaluation program. Approximately 300 people on site received training on the purpose, process and applicability of the safety evaluation program. Documented justification for changes that do not require a safety evaluation was also discussed in detail during this course. A seminar on lessons learned and enhancements to the CPS safety evaluation program was also given to preparers of screenings and evaluations. This seminar addressed the adverse trend in the safety

evaluation program, discussed specific events where the CPS safety evaluation process was not used or improperly used, and discussed the changes to the CPS safety evaluation program that correct the deficiencies in the program. A training course was developed and given to the Core Review Group, consisting of experienced individuals. This course focused on thoroughness, conservatism and compliance required during the review of safety evaluations and screenings.

A Long-Term Improvement Plan has been developed to ensure that the safety evaluation process changes implemented are effective. The Long-Term Improvement Plan includes the establishment of performance measures for trending purposes. Periodic monitoring of the safety evaluation process will be performed to verify the effectiveness of the changes. This will be accomplished through self assessments and audits. CPS procedure 1005.06 will be revised as necessary to incorporate assessment results. Finally, an Independent Assessment Group was developed to perform root cause analysis on conditions adverse to quality. This group has completed a root cause investigation and provided input for further improvements.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-11-03k

Restatement of Violation

D. Failure to Perform Safety Evaluations

1. 10 CFR 50.59(a)(1), "Changes, Tests and Experiments," states, in part, that the holder of a license authorizing operation of a utilization facility may make changes to the facility as described in the safety analysis report and conduct tests or experiments not described in the safety analysis report, without prior Commission approval, unless the proposed change, test or experiment involves a change in the technical specifications incorporated in the license or an unreviewed safety question.

10 CFR 50.59(b)(1) requires, in part, that the licensee shall maintain records of changes in the facility made pursuant to this section, to the extent that these changes constitute changes in the facility as described in the safety analysis report. The licensees shall also maintain records of tests carried out pursuant to paragraph (a) of 10 CFR 50.59. These records must include a written safety evaluation which provides the bases for the determination that the test does not involve an unreviewed safety question.

The applicable sections of the Updated Safety Analysis Report (USAR) include Figure 9.1-4, which shows the piping configuration for the spent fuel pool cooling system and provided the system configuration for an idle spent pool cooling loop; Section 5.4.7, which describes the design and functional basis of the Residual Heat Removal System (RHR); and Section 3.9.4, which describes the control rod drive system.

- e. Contrary to the above, on May 3, 1995, with the reactor at power, the licensee performed a test that was not described in the safety analysis report, to determine if the control rod drive (CRD) pump's (Section 3.9.4 of the USAR) drop in CRD pressure was due to leaking valves or CRD pump degradation. The test was completed without performing a written safety evaluation to determine that the test did not involve an unreviewed safety question.

Background and Reason for Violation

On May 3, 1995, a test was performed to determine if a drop in control rod drive (CRD) system pump pressure was due to a leaking valve or CRD pump degradation. The test required manipulation of various CRD valves. The CRD system engineer developed an action plan in accordance with Nuclear Station Engineering Department (NSED) procedure A.16 "Action Plans." The engineer expected the Operations Department to

follow their own procedures with the exception of operating the minimum flow valve. A safety screening for operating the minimum flow valve was not performed because the engineer believed closing it in the configuration that the system was in during the test would not challenge the operation of the pump. Additionally, an evaluation by the vendor determined that operation in the test lineup with the minimum flow valve closed would not have an adverse affect on the pump. The engineer considered this action on the non-safety related pump too trivial to document in a safety evaluation or screening. Because this was a test not described in the USAR, a safety evaluation should have been performed to determine whether implementation of the test involved an unreviewed safety question. The cause for this violation was the action plan program was sufficiently vague to leave much to individual interpretation. The user did not perform a required safety evaluation for this test.

Corrective Steps Taken and Results Achieved

Created CPS procedure 1070.01, "Coordination Plans," which does not allow manipulating plant equipment or control work in the field, rather it requires that CPS procedure(s) be referenced or requires the development of a procedure and associated safety evaluation for equipment manipulation. Furthermore, the ability to recognize an activity as a test not described in the USAR was clarified by replacing action plans with coordination plans.

Corrective Steps to Avoid Further Violation

CPS procedure 1070.01, "Coordination Plans," requires a safety evaluation to be performed if equipment manipulation is required and a procedure does not exist. This requirement, along with changes to the safety evaluation program described below, provides the necessary mechanisms to prevent further violation.

A revision to CPS procedure 1005.06, "Conduct of Safety Reviews," was performed to implement improvements in the safety evaluation program. This revision instituted the requirements of the Core Review Group concept. The Core Review Group is a dedicated group of trained individuals who are responsible for reviewing safety evaluations. Previously any other qualified safety evaluation preparer could perform this function. The Core Review Group was established to provide consistency, feedback, and challenge the safety evaluation process.

Training was given to site personnel in January 1997, to ensure awareness and proper implementation of the safety evaluation program. Approximately 300 people on site received training on the purpose, process and applicability of the safety evaluation program. Documented justification for changes that do not require a safety evaluation was also discussed in detail during this course. A seminar on lessons learned and enhancements to the CPS safety evaluation program was also given to preparers of screenings and evaluations. This seminar addressed the adverse trend in the safety evaluation program, discussed specific events where the CPS safety evaluation process

was not used or improperly used, and discussed the changes to the CPS safety evaluation program that correct the deficiencies in the program. A training course was developed and given to the Core Review Group, consisting of experienced individuals. This course focused on thoroughness, conservatism and compliance required during the review of safety evaluations and screenings.

A Long-Term Improvement Plan has been developed to ensure that the safety evaluation process changes implemented are effective. The Long-Term Improvement Plan includes the establishment of performance measures for trending purposes. Periodic monitoring of the safety evaluation process will be performed to verify the effectiveness of the changes. This will be accomplished through self assessments and audits. CPS procedure 1005.06 will be revised as necessary to incorporate assessment results. Finally, an Independent Assessment Group was developed to perform root cause analysis on conditions adverse to quality. This group has completed a root cause investigation and provided input for further improvements.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-11-05b

Restatement of Violation

D. Failure to Perform Safety Evaluations

2. 10 CFR 50.59, "Changes, Test and Experiments," permits the licensee, in part, to make changes to the facility as described in the safety analysis report without prior Commission approval provided the change does not involve an unreviewed safety question. The licensee shall maintain records of changes in the facility and these records must include a written safety evaluation which provides the bases for the determination that the change does not involve an unreviewed safety question.

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

10 CFR 50.71(e), "Maintenance of Records, Making of Reports," requires, in part, that the licensee update the safety analysis report originally submitted as part of the application for the operating license to assure that the information included in the safety analysis report contains the latest material developed. The updated safety analysis report shall be revised to include the effects of, in part, all safety evaluations performed by the licensee in support of conclusions that changes did not involve an unreviewed safety question.

10 CFR 50.9(a), "Completeness and Accuracy of Information," requires, in part, that information provided to the NRC by a licensee or information required by regulation to be maintained by a licensee shall be complete and accurate in all material respects.

The applicable sections of the Updated Safety Analysis Report (USAR) are Section 9.4.5.2 [sic], which described the cathodic protection and table 8.3-13 which describes the delay time for equipment to sequence on the emergency diesel generators.

- a. Contrary to the above, the description of the facility in the USAR was not accurate in all material respects in that the USAR did not match the facility, required safety evaluations were not performed, corrective action was not implemented when conditions adverse to quality were identified, and the USAR was not properly updated.

Specifically, in August 1995, the licensee had identified a condition adverse to quality, in that the cathodic protection system was not adequate to protect buried piping as stated in the USAR Section 9.4.5.2 [sic]. As of October 1996, the licensee had neither taken prompt corrective action nor performed a written safety evaluation to determine if an unreviewed safety question existed for the degraded cathodic protection system.

Background and Reason for Violation

A survey to verify adequate cathodic protection for buried system piping was performed in response to the root cause identified by a condition report written on a fire protection line leak. The results of the survey indicated that portions of some buried system piping did not meet the National Association of Corrosion Engineers (NACE) cathodic protection standards. A portion of the diesel generator fill line was located in one of the areas which was inadequately protected to this standard. USAR section 9.5.4.2 states that the prevailing soil conditions at the site established the need for cathodic protection, therefore, an impressed current type cathodic protection system consisting of a d-c power supply, control cabinet, and a number of distributed anode beds would be used. The system engineer determined that because cathodic protection was provided to the diesel generator fill line CPS was in compliance with the USAR. It was not realized that specific criteria for complete corrosion control was required for cathodic protection on the diesel generator fill lines. A written safety evaluation should have been performed to address not meeting NACE standards and the potential for line failure because of this condition. The results of the evaluation should have been used either to take corrective action or to submit a change to the CPS USAR. The cause for this violation was lack of sensitivity to safety evaluation requirements.

Corrective Steps Taken and Results Achieved

A safety evaluation was performed on the diesel generator fill line addressing cathodic protection not meeting NACE standards for buried piping. This evaluation determined that the current amount of protection is adequate because the fill lines are not required for proper operation of the diesel generator units during post-LOCA maximum load demands. USAR change package 7-167 was prepared as to adequately reflect USAR requirements with the current cathodic protection afforded to the diesel generator fill line.

Corrective Steps to Avoid Further Violation

A revision to CPS procedure 1005.06, "Conduct of Safety Reviews," was performed to implement improvements in the safety evaluation program. This revision instituted the requirements of the Core Review Group concept. The Core Review Group is a dedicated group of trained individuals who are responsible for reviewing safety evaluations. Previously any other qualified safety evaluation preparer could perform this function. The Core Review Group was established to provide consistency, feedback, and challenge the

safety evaluation process. CPS procedure 1005.06 previously allowed making changes to the USAR without using the safety evaluation process through the field configuration change (FCC) process. All FCC's now require a safety evaluation if a USAR change is involved. This change ensures that all FCC's receive the proper amount of review before a change is made.

Training was given to site personnel in January 1997, to ensure awareness and proper implementation of the safety evaluation program. Approximately 300 people on site received training on the purpose, process and applicability of the safety evaluation program. Documented justification for changes that do not require a safety evaluation was also discussed in detail during this course. A seminar on lessons learned and enhancements to the CPS safety evaluation program was also given to preparers of screenings and evaluations. This seminar addressed the adverse trend in the safety evaluation program, discussed specific events where the CPS safety evaluation process was not used or improperly used, and discussed the changes to the CPS safety evaluation program that correct the deficiencies in the program. A training course was developed and given to the Core Review Group, consisting of experienced individuals. This course focused on thoroughness, conservatism and compliance required during the review of safety evaluations and screenings.

A Long-Term Improvement Plan has been developed to ensure that the safety evaluation process changes implemented are effective. The Long-Term Improvement Plan includes the establishment of performance measures for trending purposes. Periodic monitoring of the safety evaluation process will be performed to verify the effectiveness of the changes. This will be accomplished through self assessments and audits. CPS procedure 1005.06 will be revised as necessary to incorporate assessment results. Finally, an Independent Assessment Group was developed to perform root cause analysis on conditions adverse to quality. This group has completed a root cause investigation and provided input for further improvements.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-11-07b

Restatement of Violation

D. Failure to Perform Safety Evaluations

2. 10 CFR 50.59, "Changes, Test and Experiments," permits the licensee, in part, to make changes to the facility as described in the safety analysis report without prior Commission approval provided the change does not involve an unreviewed safety question. The licensee shall maintain records of changes in the facility and these records must include a written safety evaluation which provides the bases for the determination that the change does not involve an unreviewed safety question.

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

10 CFR 50.71(e), "Maintenance of Records, Making of Reports," requires, in part, that the licensee update the safety analysis report originally submitted as part of the application for the operating license to assure that the information included in the safety analysis report contains the latest material developed. The updated safety analysis report shall be revised to include the effects of, in part, all safety evaluations performed by the licensee in support of conclusions that changes did not involve an unreviewed safety question.

10 CFR 50.9(a), "Completeness and Accuracy of Information," requires, in part, that information provided to the NRC by a licensee or information required by regulation to be maintained by a licensee shall be complete and accurate in all material respects.

The applicable sections of the Updated Safety Analysis Report (USAR) are Section 9.4.5.2 [sic], which described the cathodic protection and table 8.3-13 which describes the delay time for equipment to sequence on the emergency diesel generators.

- b. Contrary to the above, the description of the facility in the USAR was not accurate in all material respects in that the USAR did not match the facility, required safety evaluations were not performed, corrective action was not implemented when conditions adverse to quality were identified, and the USAR was not properly updated.

Specifically, in 1993 the licensee had identified a condition adverse to quality, in that a discrepancy existed between the as-built condition of the control room chillers and the system as described in USAR table 8.3-13. The licensee had identified that the chillers may auto-start in about 2.5 minutes after an event while the USAR documented that they would start 20 minutes after an event. As of October 1996, the licensee had neither taken prompt corrective action nor performed a written safety evaluation to determine if an unreviewed safety question exists for the auto-restart of the control room chillers after loss of power.

Background and Reason for Violation

In October 1993, Division 1 Diesel Generator Integrated Loss of Power (LOP)/ Emergency Core Cooling System (ECCS) surveillance testing was performed per CPS surveillance procedure 9080.21. The 'Loss of Power' section of the surveillance procedure tests to ensure that the Division 1 Diesel Generator starts and vital loads are powered in a prescribed manner. This part of the test was performed three times. In the surveillance procedure, checks are made to ensure that the control room chiller, 0VC13CA, is not running following re-energization of the vital bus by the diesel generator. Following one of the tests, 0VC13CA was found running. The VC system engineer was contacted by operations to determine why the chiller was running. The system engineer responded to the Shift Supervisor's request by letter. The letter stated that the auto-start of the chiller was not of an immediate concern in that it would not adversely affect DG loading. The USAR description for loading of the DG following a 'Loss of Power' states that the VC chillers will be manually started 20 minutes following the 'Loss of Power' event. The Engineer determined that a faulty relay operation could result in the Division 1 VC chiller auto-starting and any such auto-start would require at least 2 minutes and 30 seconds. Because the chiller is the only additional load between the 2-minute point and the 20-minute point of the DG starting and loading sequence, the loading capacity of the DG would not be adversely affected. A safety evaluation was not performed to support this conclusion.

To address the discrepancy between the possible system malfunction and the USAR description, an Engineering Work Request (EWR) was generated proposing to eliminate the possibility of an auto-start by removing the auto-start circuitry in the chiller control circuits. This would prevent the possibility of the VC chillers from auto-starting on an interruption in power regardless of the faulty relay performance. The EWR was submitted in October 1993. The EWR and proposed design change was later disapproved following a review of all outstanding design change requests in August 1996. The reason for the disapproval was the surveillance procedures for the 'Loss of Power' test were revised to read that the VC chillers may auto-start during the test and that this was acceptable. It was determined that the revision to the procedure and a change to the DG load sequence design and USAR were more prudent than a hardware design change to the chiller auto-start circuitry. This event constituted a violation of 10 CFR 50.59, 10 CFR

50, Appendix B, Criterion XVI, 10 CFR 50.71 (e), and 10 CFR 50.9 (a). The cause for this violation was an inadequate operability determination which led to untimely corrective actions, and a generic issue regarding the lack of a formal operability program. Finally, lack of sensitivity to safety evaluation requirements was also identified as a contributing factor.

Corrective Steps Taken and Results Achieved

The control circuits for 0VC13CA/B have been modified to keep the VC chillers from starting automatically following a loss of power. With installation of this modification, the original DG load sequence design is assured and the installed configuration of the VC chillers are now in conformance with the description given in the USAR. With this modification, no unreviewed safety questions exist associated with auto-starting of the VC chillers on 'Loss of Power.'

CPS conducted an initial review of approximately 140 corrective action documents assigned to the Engineering Department for operability evaluations. This review did not determine any inoperable equipment, but did identify a lack of a comprehensive site wide program on operability determinations. In addition to the initial population of 140 corrective actions documents, CPS reviewed other documentation associated with operability including letter files, Centralized Commitment Tracking documents, and relevant Condition Reports that had been assigned to the Maintenance Department with operability implications. This review was verified by an independent contractor with extensive experience in operability evaluations. Additionally, an external review on a programmatic basis was performed by another utility with a recognized successful program.

Based on the review of operability evaluations as well as input received by the independent contractor and utility reviews, a formal operability determination/evaluation program was implemented. CPS procedure 1014.06, "Operability Determination," was developed. This procedure establishes the methods for performing operability evaluations and determinations. Clearly-stated time requirements for both operability evaluations and determinations are also specified. Individuals who perform operability evaluations for NSED must be certified. One of the requirements to become certified was to attend a training course that included aspects of the purpose, background, procedure, expectations and examples of operability determinations. Shift Supervisors were also trained in the form of an On-the Job-Training (OJT) certification. CPS procedure 1016.01, "Condition Report," and the Engineering Evaluations form were also revised to incorporate the requirements of the Operability Determination procedure.

Corrective Steps to Avoid Further Violation

A revision to CPS procedure 1005.06, "Conduct of Safety Reviews," was performed to implement improvements in the safety evaluation program. This revision instituted the requirements of the Core Review Group concept. The Core Review Group is a dedicated group of trained individuals who are responsible for reviewing safety evaluations. Previously any other qualified safety evaluation preparer could perform this function. The Core Review Group was established to provide consistency, feedback, and challenge the safety evaluation process. CPS procedure 1005.06 previously allowed making changes to the USAR without using the safety evaluation process through the field configuration change (FCC) process. All FCC's now require a safety evaluation if a USAR change is involved. This change ensures that all FCC's receive the proper amount of review before a change is made.

Training was given to site personnel in January 1997, to ensure awareness and proper implementation of the safety evaluation program. Approximately 300 people on site received training on the purpose, process and applicability of the safety evaluation program. Documented justification for changes that do not require a safety evaluation was also discussed in detail during this course. A seminar on lessons learned and enhancements to the CPS safety evaluation program was also given to preparers of screenings and evaluations. This seminar addressed the adverse trend in the safety evaluation program, discussed specific events where the CPS safety evaluation process was not used or improperly used, and discussed the changes to the CPS safety evaluation program that correct the deficiencies in the program. A training course was developed and given to the Core Review Group, consisting of experienced individuals. This course focused on thoroughness, conservatism and compliance required during the review of safety evaluations and screenings.

A Long-Term Improvement Plan has been developed to ensure that the safety evaluation process changes implemented are effective. The Long-Term Improvement Plan includes the establishment of performance measures for trending purposes. Periodic monitoring of the safety evaluation process will be performed to verify the effectiveness of the changes. This will be accomplished through self assessments and audits. CPS procedure 1005.06 will be revised as necessary to incorporate assessment results. Finally, an Independent Assessment Group was developed to perform root cause analysis on conditions adverse to quality. This group has completed a root cause investigation and provided input for further improvements.

Date When Full Compliance Will Be Achieved

CPS is currently in compliance.

Violation 96-09-08b

Restatement of Violation

E. Ineffective Corrective Actions to Resolve Inoperable Containment Penetrations

1. Clinton Power Station (CPS) Technical Specification 3.6.1 a [sic] requires that feedwater primary containment isolation valves be operable.

Technical Specification [sic] 3.6.1.3.8, the surveillance requirement for Technical Specification 3.6.1 [sic], requires verification that the combined leakage rate for all secondary containment bypass leakage paths is $\leq 0.08L_a$, when pressurized to $\geq P_a$.

10 CFR Part 50 Appendix J Section III.C.2 (a) requires, in part, that valves be pressurized with air at a pressure of P_a .

CPS surveillance procedure 9861.02 (Rev. 26), "Local Leak Rate Testing Requirement and Type C (Air) Local Leak Rate Testing," which implemented Technical Specification 3.6.1.3.8 and 10 CFR Part 50, Appendix J, requires at step 5.16.1 that both sides of the valve seat shall be drained below the valve seating surfaces prior to performing air leak testing of containment isolation valves.

Contrary to the above, on April 2 and 10, 1995, the licensee did not drain water from the outboard feedwater primary containment isolation valves (1B21F032 B & A, respectively) to below the valves' seating surfaces prior to leak testing the valves. This resulted in the failure to ensure that the primary containment isolation valves were operable during operation cycle 6.

Background and Reason for Violation

While performing corrective maintenance on the outboard primary containment isolation valve (ISVs), 1B21F032A/B, plant personnel discovered residual water in the body covering a portion of the disc/seat area. It was concluded that the valves were probably leak rate tested in this configuration invalidating the air leakage rate tests on both the outboard ISVs. Therefore, Technical Specification (TS) Surveillance Requirement (SR) 3.6.1.3.8 was not met. The cause of this event is attributed to the plant's original design which did not allow complete draining of the valves, and a lack of familiarity with this design. An investigation into this event found that the segment of the feedwater lines between the inboard ISVs and the outboard ISV is sloped at a 0.5 degree angle toward the outboard ISVs. This is in accordance with original plant design. As a result, the drain lineup used to prepare the system for testing trapped water in the outboard ISVs. The

valves previously used to drain the leak rate test volume did not drain the outboard valves sufficiently to expose the complete disc/seat areas to the test medium.

Corrective Steps Taken and Results Achieved

New drain valves were installed on the bottom of both the outboard ISVs in accordance with Engineering Change Notices (ECNs) 29920 and 29921 to allow for complete draining of the ISVs. A revision to the leak rate test procedures was performed for the outboard ISVs to include complete draining with the new drain valves.

Corrective Steps to Avoid Further Violation

Other containment penetrations that are subject to type C air leakage rate testing were reviewed to ensure that a test volume draining issue similar to this event was not present. This review was completed on May 9, 1997, no discrepancies were found.

Date When Full Compliance Achieved

CPS is currently in compliance.

Violation 96-09-08a

Restatement of Violation

E. **Ineffective Corrective Actions to Resolve Inoperable Containment Penetrations**

2. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action" requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, and defective material and equipment, are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective actions taken to preclude repetition.

Contrary to the above, during refueling outages 1, 2, 3, 4, 5, and 6 that were performed between January 1991 and October 1996, the licensee failed to establish corrective actions to preclude repeated failure of the outboard feedwater containment isolation check valves to pass the as-found local leak rate air test performed during each refueling outage, thus resulting in a significant condition adverse to quality.

Background and Reason for Violation

During Refueling Outage RF-6, a Local Leak Rate Test on both the outboard feedwater line containment isolation valves, 1B21F032A and 1B21F032B, resulted in leakage rates that were not quantifiable. This deficiency had also been experienced during RF-1, RF-2, RF-3, RF-4, and RF-5. The cause for this event is a failure to take effective corrective action to prevent this deficiency in the outboard ISVs and a failure to pursue alternative system design.

Corrective Steps Taken and Results Achieved

CPS performed a major modification to the 1B21F032A and 1B21F032B valve actuators during RF-6. Modification FW-038 implemented a dual actuator arrangement on these valves to provide a balanced and increased closing force on the valve discs. The original split hinge pin design was also modified in favor of a solid hinge pin design to ensure the maximum closing force of the actuators was translated effectively to the valve discs. This modification represents a significant change to the check valves and Illinois Power is confident that this modification will correct previous deficiencies.

Corrective Steps to Avoid Further Violation

In the event that the modification performed on the check valves during RF-6 does not work, CPS is exploring the option of a "Keep-Fill" system for the feedwater containment penetrations. Informational testing performed during RF-6 indicated that these check valves respond well during a water test. This type of system is already used in other BWR-6 facilities with positive results.

Date When Full Compliance Achieved

CPS is currently in compliance.