FirstEnerg

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December 18, 1997 PY-CEI/NRR-2241L

Director, Office of Enforcement United States Nuclear Regulatory Commission 11555 Rockville Pike Rockville, MD 20852-2738

Perry Nuclear Power Plant Docket No. 50-440 Reply and Answer to a Notice of Violation

Dear Sir:

Enclosed herewith is the Perry Nuclear Power Plant's (PNPP) response to the November 18, 1997, Notice of Violation and Proposed Imposition of Civil Penalty - \$100,000.

For Violation A (EA 97-047), which involved the inappropriate restoration to service of a Reactor Recirculation Flow Control Valve Hydraulic Power Unit, the "Reply Notice of Violation" is provided in Attachment 1. Cleveland Electric Illuminating Co. (CEI) management recognizes, understands and concurs with the NRC perspective on the importance of prompt, effective and lasting corrective actions for operational events and equipment problems. Current management philosophy has resulted in a high level of attention to the corrective action program, and to management's active involvement in its implementation. Your recognition of the corrective actions taken for the November 1996 event reaffirms CEI objectives for continuous attention to the corrective action program and effectiveness reviews.

CEI also understands the need for diligent attention to reactivity manipulations and operations with potential effects on reactor power. Plant management has taken extensive corrective action towards clarifying expectations for licensed operators, and continues to strive for event free operations through understanding of risk and maintaining appropriate perspective in operational decision making. Accordingly, pursuant to 10 CFR 2.201, Violation A is being accepted as cited in the Notice of Violation.

No additional information is being provided in response to Violation B (EA 96-542), which was fully addressed in Licensee Event Report No. 96-008.

CEI denies Violation C (EA 97-430), concerning a safety evaluation used to support continued acceptability of a non-conforming condition, specifically, leakage in excess of the design assumptions for the Emergency Closed Cooling (ECC) system as described in the Updated Final Safety Analysis Report (USAR). During inspection activities from February through August 1997, inspectors questioned





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the appropriateness of the conclusions provided in the subject 10 CFR 50.59 Safety Evaluation, which addressed the effects of increased boundary valve leakage on ECC System operability. Ultimately, the NRC concluded that the condition accepted by the plant staff under 10 CFR 50.59 constituted an Unreviewed Safety Question (USQ) on the bases of increased probability of equipment malfunction and increased consequences of an analyzed event. The increases in both consequences and probability were, by NRC conclusion, the direct result of the increased presence in the plant of operators who are fully trained and qualified for the activities under consideration. CEI has closely reviewed this interpretation of 10 10 50.59 and has concluded that it is inconsistent with the application of the regulation to date, by both the undustry and the NRC. Accordingly, the "Reply to a Notice of Violation," pursuant to the provisions of 10 CFR 2.201 and the requirements set forth in your letter, provides the specific information to support the position, and is included in Attachment 1.

CEI believes that acceptance of this violation as stated would establish a position which would result in further uncertainty for licensees. The effects of such an approach would include a severe impediment to the responsible management of nuclear plant activities, as well as an unnecessary licensing activity. The positions established by the proposed violations, when carried through to their logical conclusions, would restrict normal plant operations as well as the development of improvements to procedures which address off-normal cr emergency conditions. In an extreme, but still logical application, additional operator actions for proactive monitoring of plant equipment could not be implemented without a license amendment, because the presence of an operator in safety related areas would increase the probability of an unimentional error, as well as increase dose consequences in the event of an accident.

As a result of the Pre-decisional Enforcement Conference held on October 7, 1997, and subsequent correspondence, CEI understands that proper application of 10 CFR 50.59 is primarily a regulatory issue, meant to preserve the necessary involvement of the NRC in the decision making process, as opposed to a safety concern. CEI also understands that, with respect to the determination of a USQ, the threshold for acceptable increases in consequence and probability from an existing allowable initial condition (e.g. dose limits established by regulation) is zero. Because licensees can not apply reasonable discretion or engineering judgment where increases in probability or consequence are concerned, it is all the more important that the allowable initial conditions are reasonably established; are consistent with other applicable regulations; and preserve the regulatory process.

Pursuant to the provisions of 10 CFR 2.205 and the requirements set forth in your letter, Attachment 2 provides the requisite "Answer to a Notice of Violation," wherein the above discussed violations are denied in part, and full remission of the \$50,000 Civil Penalty associated with Violation C is requested. Accordingly, an electronic funds transfer in the amount of \$50,000 was made on December 17, 1997, for payment of the civil penalty associated with Violation A.

Denial of the violation by CEI should not be construed to indicate any opinion that all aspects of this issue were handled appropriately. To the contrary, CEI management has reviewed the circumstances surrounding this event and has identified several areas in which plant staff performance was deficient, including application of the plant-specific 50.59 program. These factors are immaterial to the CEI position on the interpretation of 10 CFR 50.59; however, they are discussed here to demonstrate that CEI management has achieved a thorough understanding of the plant staff performance failures in resolving the ECC valve leakage issue.

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In October' 1996, when it was realized that system leakage exceeded the assumptions stated in the USAR, the issue was appropriately classified as a non-conforming condition under the site Corrective Action Program. To determine the condition of the ECC system, Engineering Department personnel performed an evaluation, the conclusion of which was that the condition would not require the ECC system to be considered inoperable. The non-conforming condition was dispositioned to be "use(d) asis." Although operability was maintained, this disposition was inappropriate, based on the intent to repair the valves, thus restoring leakage to within the design basis as described in the USAR. The correct approach would have been to effect a "repair" disposition, and to document the operability determination in accordance with guidance provided to the industry under Generic Letter 91-18, "Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability." Provisions for these methods of addressing the issue are clearly provided in existing administrative procedures.

In support of the "use as-is" disposition for the non-conformance, a safety evaluation was required to ensure that no unreviewed safety question would be introduced by acceptance of the non-conformance as an acceptable solution for degraded conditions. Although arguments are provided herein to demonstrate that the change would not result in any increase in event probability or consequence, the PNPP 10 CFR 50.59 Safety Evaluation process required the issue to be identified as a USQ, based on the reduction in a margin to safety as described in the Perry Safety Evaluation Report (SER). This provision of the PNPP Safety Evaluation program is consistent with the guidance provided in NSAC-125; however, as discussed in the NRC letter of November 18, 1997, the NSAC-125 "definition of reduction in margin is more conservative than the NRC definition of reduction in margin as defined in the basis for a technical specification." Accordingly, while the evaluation of the proposed change is not considered to be a violation of 10 CFR 50.59, proper application of the Perry program would have forced a re-evaluation of the issue and would have likely resulted in the proper dispositioning of the situation. The Safety Evaluation was reviewed by Engineering management personnel, reviewed by the Plant Operations Review Committee, and ultimately accepted by senior plant management. In March 1997, the previously approved Safety Evaluation was used as the basis for a USAR change which incorporated the extended leakage limits for degraded conditions while preserving the original assumptions for system leakage under non-degraded conditions. It should be noted that the design basis of 0.5 gallons per hour (gph) was never changed. Thus, a repair of these valves under ASME Section XI requirements at the next available opportunity would eliminate the degraded conditions. In spite of the fact that the OPERABILITY of the ECC system was never in question and the resultant corrective action plan for the restoration of valve integrity was an acceptable solution under Generic Letter 91-18 guidance, it is clear that inappropriate decisions resulted in an improper basis for the course of action chosen.

CEI management considers this is a deficiency in the implementation of the process for reviewing intended changes to PNPP, and is committed to implementing the actions necessary to upgrade the understanding and awareness of the regulatory and procedural requirements of 10 CFR 50.59. CEI clearly accepts responsibility for the proper application of all regulatory requirements and expectations, from both a safety and regulatory perspective; however, it is extremely important that appropriate and safety-beneficial interpretations of regulatory requirements are established through the enforcement process.

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It is clear that the industry is in a state of fluctuation and uncertainty with respect to implementation of 10 CFR 50.59. Although the October 7, 1997 Pre-decisional Enforcement Conference provided a limited opportunity to openly discuss the various aspects of this very complex issue, continued, open dialogue is essential until a common understanding is reached. CEI requests additional management meetings with NRC staff prior to the ultimate resolution of this enforcement action. Please contact Mr. Henry L. Hegrat, Manager - Regulatory Affairs, at (440) 280-5606, to coordinate further communication, or to address any unanswered questions.

Very truly yours,

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Attachment 1, Reply to a Notice of Violation Attachment 2, Answer to a Notice of Violation

cc: NRC Document Control Desk NRC Region III Administrator NRC Resident Inspector NRC Project Manager I, Lew W. Myers, being duly sworn state that (1) I am Vice President - Nuclear, of the Centerior Service Company, (2) I am duly authorized to execute and file this certification on behalf of The Cleveland Electric Illuminating Company and Toledo Edison Company, and as the duly authorized agent for Duquesne Light Company, Ohio Edison Company, and Pennsylvania Power Company, and (3) the statements set forth herein are true and correct to the best of my knowledge, information and belief.

Lew W. Myers

Sworn to and subscribed before me, the 18th day of December, 1997

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Jane E. Moto

JANE E. MOTT Notery Public, State of Ohio My Commission Expires Feb. 20, 2000 (Fiecorded in Lake County)

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REPLY TO A NOTICE OF VIOLATION

VIOLATION A

Restatement of the Violation

During NRC inspections conducted from December 28, 1996 to February 3, 1997, and from July 21 through August 27,1997, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NKC Enforcement Actions," NUREG-1600, the NRC proposes to impose a civil penalty pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 Constant Procedure violations and associated civil penalty are set forth below:

A. Violation Assessed a Civil Penalty Associated with Reactor Recirculation System Flow Control

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions." requires, in part, that measures shall be established to assure conditions adverse to quality, such as failure malfunctions, deficiencies, deviations, defactive materials and equipment, and nonconformances 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 action taken to preclude repetition.

Contrary to the above, as of November 9, 1996, the licensee failed to take adequate measures to determine the causes of a significant condition adverse to quality and failed to take corrective action to preclude repetition. Specifically, on July 27, 1994, an uncontrolled reactivity change, a significant condition adverse to quality, occurred during unictended movement of a reactor recirculation flow control valve. As of November 9, 1996, when a similar event occurred, the licensee had not determined the causes of the July 24, 1994 event, and the licensee had not implemented adequate corrective actions to preclude reportion of an uncontrolled reactivity change caused by movement of a reactor recirculation flow control valve. Further, (1) Operator training following the July 27, 1994 event failed to adequately inform the operators of the potential concequences of a hydraulic power unit (HPU) subloop operate/isolate solenoid valve failure, and (2) on November 9, 1996, when a blown fuse was found in an HPU while the reactor recirculation 'A' flow control valve (FCV) was being returned to service, the shift supervisor authorized the MeU to be returned to service with a blown fuse based on a misunderstanding that a mispositioned solenoid valve could cause a positive reactivity addition by allowing the reactor recirculation FCV to open further. (01013)

This is a 5, verity Level III violation (Supplement I). Civil Penalty - \$50,000.

Reply

The violation is accepted as written.

Reason for the Violation

The reason for this violation was that the corrective actions put in place following the flow control valve event on July 27, 19°4, did not correct the root cause of the operate/isolate solenoid valve failure. A solenoid valve failure on November 9, 1996 presented a challenge to the operations staff. The cause of the 1996 event was that the level of involvement of the Shift Supervisor in the decision making process for restarting the HPU subloop distracted from his oversight responsibilities. Contributing causes to the 1996 event included two particular issues. First, a procedure compliance issue was identified in that subloop restoration continued without meeting

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the requirements of a procedural step. Second, degraded HPU subloop material condition was tolerated. Prior to the 1996 event, equipment degradation had resulted in one subloop being unavailable for use; consequently, weekly shifting of the subloop, a corrective action put in place to help prevent solenoid valve sticking, had been suspended while troubleshooting and repair activities were underway. The past corrective actions were not effective in removing these challenges to the operators.

The root cause of the HPU isolate/operate solenoid valve failures was determined to be a residue buildup on the isolate/operate valve stem resulting from a localized, heat-induced degradation of the hydraulic fluid. This residue is a brownish, varnish-like substance which causes the valve stem to stick, resulting in solenoid coil over current, followed by blown control room fuses. The investigation identified that the combination of the hydraulic fluid in localized, close tolerance sites on the valve stem. Contributing to this mechanism, the solenoid valve vendor had begun supplying replacement solenoid coils which operated at higher temperatures, as a result of pressure and flow considerations in other hydraulic applications (e.g. industrial hydraulic control systems). The full understanding of these degradation mechanisms was not achieved until after the 1996 event.

Corrective Steps Taken and Results Achieved

The NRC recognized that high level management attention was given to the November 9, 1996 event and an investigation into the event was completed. It was also recognized that corrective actions were taken to address the operational performance weaknesses associated with the event. The NRC recognized that other corrective actions included, but were not limited to: remedial action for the crew that caused the event; training on the event for the other crews; and modifications to improve HPU reliability. Operations Section management instituted immediate corrective actions for manipulating Reactor Recirculation system HPUs. The Operations Superintendent published two Daily Instructions. These instructions provided operating policies and expectations aimed at all operators and addressed conservative decision making, objective thinking, utilization of management resources, and the potential for flow control valve motion whenever any HPU manipulation is conducted.

Other significant corrective actions resulting from the investigation include the following:

- Isolate/operate solenoid valves have been replaced with an improved design consisting of a wet-coil
 armature, which is less susceptible to variab buildup and sticking.
- The Turbine Control system was evaluated and found not to be affected by this phenomenon.
- Developed and installed a means to monitor solenoid ceil currents to identify solenoid condition and aid in determining isolate/operate valve position prior to HPU operation.
- The Operations Section defined expectations regarding communications of corrective action plans and
 operational troubleshooting plans and developed a process for resolution of risk significant and risk
 contributor system/component problems.
- The independent role of the Shift Technical Advisor (STA) in decision making and corrective action plan development was re-emphasized.
- Conducted simulator scenarios specifically directed at onservative decision making, teamwork, and resource management.

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- Evaluated non-operational SRO tasks and determined if any additional precautionary operator actions are necessary when manipulating components that could affect reactivity.
- Clarified management expectations regarding communication between the Control Room and plant staff, specifically to emphasize the necessity to maintain a questioning attitude, to request all relative information from the Control Room when participating in decision making and insure information provided is thoroughly understood, and that all participants share the ownership of the results of the decision making process.

Although previous corrective actions did not ultimately prevent recurrence, they have contributed to improved system performance. These corrective actions include the following:

- Air Breather Filters Repetitive tasks to replace the Air Breather Filters every 2 months were generated. Air Breather Filters contain a desiccant material to remove moisture. With the HPUs located on grating above the Suppremion Pool, these filters are needed to prevent the moisture from entering the HPU reservoirs.
- Fullers Earth Filters Fullers Earth Filters are necessary to maintain oil quality by reducing the acid content
 of the hydraulic fluid. Repetitive tasks to change these filters were changed from once every 12 months to
 once every 6 months. The original extension of these task from 6 months to 12 months in 1990 is the root
 cause of the hydraulic fluid quality excursions in 1993 and 1995. It is necessary these tasks be performed
 every 6 months and performed early if oil quality results indicate negative trends.
- Hydraulic Oil Samples Repetitive Tasks to take oil samples were changed from once every 3 months to
 once every 6 weeks. This was done to monitor oil quality more closely.
- Hydraulic Oil change-out/Flush valve change-out/Filter change-out In November 1993, during a forced outage, the HPU reservoir oil was changed out. No system flush was performed, and the actuator and associated piping were not drained. During Refueling Outage 5, the HPU reservoir, actuator and associated piping were drained, flushed and refilled. For the PNPP configuration, a flush was demonstrated to be both necessary and effective.
- Weekly Subloop Shifts Prior to the 1994 event at Clinton, the subloops were shifted on a monthly frequency in response to vendor recommendation. Following the Clinton event, the frequency was increased to weekly, if the subloop was available. This was incorporated in the plant rounds as an evolution to be performed weekly. The periodic shifting was put in place to exercise the isolate/operate valves to avoid any residue buildup on the valve spool. Prior to the 1996 event, equipment degradation had resulted in one subloop being unavailable for use; consequently, regular shifting of the subloop had been suspended winter trouble shooting and repair activities were underway.
- Fuse Check Steps were included in the system operating instruction to check the operate/isolate solenoid coil fuses prior to startup of the associated subloop. A blown fuse indicates a failed isolate/operate valve coil. These steps were added in response to the Clinton overpower event.
- Valve Replacement Valve replacement was performed in 1990 to determine the extent of condition and to determine if the valve should be replaced on a regular frequency. Repetitive tasks for valve replacement exist on a 36 month frequency. Unfortunately, because the valve supplier increased the strength of the solenoid coils and consequently the operating temperature, in response to application concerns by other, non-nuclear users of the component, an additional contributor to valve failure was unknowingly introduced.

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The comprehensive investigation and corrective actions taken in response to the 1996 event were the result of a significant upgrade to the PNPP Corrective Action Program implemented in October 1994. This new program reduced the threshold for identification of potential issues, incorporated multi-disciplined investigation teams for significant issues, included development of trend reports, and added cross-functional management review of significant investigations and corrective actions. The program improvements have continued as experience has accumulated, including the addition of collective significance reviews, and renewed senior management ownership of significant issues as well as the program itself.

Corrective Steps that Will be Taken to Avoid Further Violations

An effectiveness review of the wet armature design will include removal and inspection of one of the valves to verify the conditions which led to the failure of the previous design have been corrected. This valve is scheduled to be removed the week of January 4, 1998.

Although not in response to this violation, improvements to the corrective action program now include senior management review of significant event investigations and corrective actions. The corrective action program also includes effectiveness reviews to ensure corrective actions are having the intended effects. Additionally, a collective significance review has been added to the program to provide a periodic assessment of developing areas of weakness based on issue common factors.

Date When Full Compliance Was Achieved

Full comp nee was achieved in February 1997, following replacement of the of the isolate/operate solenoid valves with e improved wet armature design.

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VIOLATION C

Restatement of the Violation

C. Violation Assessed a Civil Penalty Associated With Emergency Closed Cooling Systems Surge Tanks

10 CFR 50.59, permits the licensee, in part, to make changes to the facility and procedures as described in the safety analysis report without prior Commission approval provided the changes do not involve an unreviewed safety question. Records of these changes must include a written safety evaluation which provides the bases for the determination that the changes do not involve an unreviewed safety question.

10 CFR 50.59 (a)(2)(i) states, in part, that a proposed change shall be deemed to involve an unreviewed safety question if, the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report may be increased.

Updated Safety Analysis Report (USAR) Section 9.2.2.3 "Emergency Closed Cooling Syster" - Safety Evaluation" states, the emergency closed cooling surge tanks are designed to maintain a 7-dc, supply of water with normal system leakage without the need to provide ...akeup water.

Contrary to the above, Safety Evaluation No. 96-128 prepared by the licensee on October 10, 1996, and approved on October 21, 1996, evaluated a change in the design basis for the emergency closed cooling system surge tanks. The licensee changed the sizing basis of the surge tanks from a 7-day supply as stated in USAR Section 9.2.2.3 to a 30-minute supply, and the licensees analysis failed to identify that the change was an unreviewed safety question. Specifically, the safety evaluation did not adequately assess the increased probability of a malfunction of equipment important to safety associated with an increased potential for operator error as operators replenished the surge tanks on a 30-minute post accident basis instead of the previously evaluated period of 7 days. The safety evaluation also failed to recognize the increased consequences of a design basis loss of coolant accident associated with an increased projected dose to the operators as they refilled the surge tanks on an increased frequency. (03/913)

This is a Severity Level III violation (Supplement 1). Civil Penalty - \$50,000.

Denial of the Alleged Violation

In accordance with 10 CFR 2.201(b), this violation is denied as written for the following reasons.

The NRC concluded that the condition accepted by the plant staff under 10 CFR 50.59 constituted an unreviewed safety question (USQ) on the bases of increased probability of equipment malfunction and increased consequences of an analyzed event. CEL ereby denies Violation C. The increases in both consequences and probability were, by NRC conclusion, the direct result of the increased presence in the plant of operators who are fully trained and qualified for the activities under consideration. CEI has closely reviewed this interpretation, and has concluded that it is inconsistent with the intent and the requirements of 10 CFR 50.59 as well as the application of the regulation to date, by both the industry and the NRC. Accordingly, this "Rep!y to a Notice of Violation," pursuant to the provisions of 10 CFR 2.201 and the requirements set forth in your letter, provides the specific arguments to support the denial.

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Reasons for Denial of the Violation

Reason 1. The design of the plant, and the corresponding design bases for the ECC system, were not changed by the subject safety evaluation. The plant condition was identified as a non-conforming condition, and activities were planned to restore the system condition to the original licensing basis.

The Energency Closed Cooling (ECC) system surge tanks are designed to ensure adequate net positive suction head (NPSH) is provided to the ECC pumps. Further, the design of the surge tanks provides a 7-day supply of water with normal system leakage, 0.5 gallons per hour (gph), before makeup water is needed. Neither the design nor the design basis was changed.

As a result of an earlier event involving ECC leakage, the ECC system had been determined to be leaking in excess of 0.5 gph. Specifically, the A loop of the ECC system showed no discernible valve leakage; however, the B loop indicated valve leakage of approximately 1.1 gallons per minute (gpm). A determination of operability for the ECC system with increased leakage concluded that it was acceptable to allow system leakage of 3.0 gpm for ECC Loop A and 3.5 gpm for Loop B. For the time period prior to correcting this degraded condition, the increased leakage limits would reduce the 7-day supply of water to a 30 minute supply and introduce the need for local operator action to ensure sustained adequate NPSH to the ECC pumps. Actual leakage would have resulted in no reduction in supply for the A loop, and greater than the 30 minute supply for the B loop.

While the discussion of the degraded condition and the allowable leakage therefrom may have been inappropriately included in the Updated Final Safety Analysis (USAR), it was done so to preclude the need for preparing additional degraded condition operability determinations should future leakage rates so mandate. This USAR inclusion was never contemplated by CEI to represent a permanent design change. In fact, the original design leakage criteria of 0.5 gph was maintained both in the design documents and the USAR. The resulting USAR change was initiated:

The sentence "In addition, the emergency closed cooling surge tanks are designed to maintain a seven day supply with normal system leakage without the need to provide makeup water," was removed from page 9.2-27 and replaced with the following discussion on page 9.2-24: "Some leakage from the emergency closed cooling system can be expected. A conservative estimate of leakage from pump seals and valve stera packing is 0.5 gal/hour. With this leakage rate, the surge tank would not be emptied until after seven days. Under conditions of degraded system leakage, i.e., leakage in excess of 0.5 gal/hour including valve seat leakage or inter-system leakage, allowable total system leakage rates of 3.0 gallons per minute for the "A" loop and 3.5 gallons per minute from the "B" loop have been evaluated as acceptable. These higher leakage values are based on a 30 minute inventory available at the low level surge tank alarm. A manual open for action is required to establish Emergency Service Water System as the emergency makeup water source within a time frame of approximately 50 minutes following a design basis event."

The revised USAR preserves the original design considerations of a seven day inventory supply, and distinctly identifies leakage in excess of 0.5 gph as a degraded condition.

The suspected leakage was intended to be corrected in Refueling Outage Six (RFO6), which began on September 12, 1997. These intentions were documented and were being tracked in accordance with the site corrective action program, prior to identification of this issue as a potential concern by the inspectors. This information was provided to NRC staff in a telephone call on June 11 1997, and in a docketed letter (PY-CEI/NRR-2183L) on June 26, 1997.

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During the June 1997 forced outage, testing determined that the system leakage was both within the design basis and the USAR description, and therefore, there was no degraded condition. Because no actual change to the facility occurred, there is no basis for determining that 10 CFR 50.59 was violated.

Reason 2. The change to the to the description of the ECC system surge tanks in the USAR did not involve a USQ under 10 CFR 50.59 criteria because it did not in: olve a potential increase in the probability of occurrence of a malfunction of equipment important to safety.

An increase in the probability of occurrence of a malfunction of equipment important to safety was not concluded on the basis that manual actions employed were such that failure of an action would be equivalent to that of a single active failure. Chapter 15 of the USAR discusses application of "single failure" and "single operator error" criteria to the analyses of the postulated events discussed therein. Single active comport and failure criteria are applied to design basis accident categories only. Transient evaluations are judged against a criteria of one single equipmer" failure "or" one single operator error as the initiating event with no additional single failure assumptions to the protective sequences. Under the plant design basis, the single failure application could involve either a single active failure or an operator error. When compared to the original evaluated design, the failure of the operator action would result in the loss of one train of the ECC system; a loss of no greater consequence than previously evaluated in the USAR.

Part 9900 inspection manual guidance on 10 CFR 50.59, issued on April 9, 1996, states that the NRC has found compensating effects, such as administrative controls, acceptable in offsetting uncertainties and increases in probability of occurrence or consequences of an accident previously evaluated or reductions in margin of safety, provided the negative impact is negligible, and is clearly outweighed by the compensatory actions.

To compensate for the temporary degraded condition, procedures were put in place to direct the necessary operator actions. This change required plant operators to reposition two, two-inch manual globe valves to align the Emergency Service Water (ESW) system to fill the ECC surge tanks. These valves are physically located in the Intermediate Building (IB) at the 599 foot elevation. Extensive time-motion analyses were conducted to verify that the evolution could be reasonably carried out without error. System drawings were also updated to reflect valve position changes made to support the compensatory operator actions. If the valves were leaking in excess of system design, the manual operator action would be required only in the unlikely event of a design basis accident, not during normal operations.

The significant efforts put forth by the PNPP staff to compensate for the additional actions and reduce the potential for error is the basis for the conclusion that no increase in probability of equipment malfunction is introduced. If these compensating factors can not be considered in determining that there is no increase in probability, no additional operator actions, for any normal or off-normal operating condition, could be permitted without also concluding an increase in the probability of a malfunction.

Reason 3. The change to the description of the ECC system surge tanks in the USAR did not involve a USQ under 10 CFR 50.59 criteria because it did not involve potential increased consequences of a design basis accident associated with increased projected dose to the public due to operators refilling the surge tanks on an increased frequency.

To evaluate the radiological consequences of these post-accident actions, a radiological assessment analyzed the physical actions, environment, and radiological conditions that would exist. A time-motion study determined that the time for the operator to enter the IB-599 foot elevation, traverse the area, unlock and open the valves, and exit the area, was expected to be less than 15 minutes. Based on this time period, dose was calculated utilizing the design basis area dose calculations. Dose was bounded by the NUREG-0737 defined limits of 5 rem. The expected dose projection would therefore be within USAR 12.6.1.a. guidelines for post accident dose rates in

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areas designated as "infrequent occupancy" and the activity can be performed at any time throughout the acc.dent without exceeding the 5 rem whole body dose.

NUREG-0887, the Safety Evaluation Report relating to the operation of the PNPP, in Section 12.3.2 determined that CEI has performed a radiation shielding review for vital areas and access routes in accordance with Item II.B.2 of NUREG-0737 and conforms with the criteria of NUREG-0800. Considering the radiological conditions and time requirements along with the access routes to the ESW emergency makeup to ECC surge tank valves, PNPP continues to conform with the criteria as established in NUREG-0887 and NUREG-0737 to perform the operator action to mitigate the consequences of an accident.

An increase in the consequences of an accident previously evaluated in the USAR was not concluded since doses to the public were not increased above the current licensing limit and that doses to onsite personnel were not in excess of the limits as specified in NUREG-0737 or the USAR such that actions required to mitigate the consequences of accidents were not impeded. Dose values were not explicitly provided within the body of the safety evaluation but were explicitly provided within the supporting documentation.

The safety evaluation addressed the consequences of the required actions by stating that the specified actions could be performed at any time throughout the course of the accident without the individual receiving in excess of 5 rem external dose. All operator actions, as described for the ECC system, can be performed within the dose limits allowed by 10 CFR 20 Subpart C - Occupational Dose Limits. The maximum dose to an individual for any single entry is estimated to be 4.4 rem. Therefore, the dose to perform any of the operator actions is bounded by the "normal" dose limit (5 rem/year) allowed for occupational exposure.

NUREG-0737 states that the design dose rate for personnel in a vital area will be such that the guidelines of GDC 19 will not be exceeded during the course of the accident. This is referring to the dose to each individual, not a collective dose for all personnel supporting the activity. The current PNPP design allows for the described operator actions to be performed within the design criteria of 5 rem. The dose expected to perform the operator actions does not increase the consequences of a design basis accident. Consequences are referring to the health and safety of the public. The proposed operator action, from a perspective of receiving the estimated dose, does not cause a change to the consequences.

The NRC position in the Notice of Violation seemingly rejects the regulatory limits as defining the limits for radiclogical consequences to plant staff, and further identifies such a condition as a USQ. This literal interpretation that additional projected dose results in increased consequences, regardless of regulatory limits, would require any additional personnel inside a radiologically restricted area (operator, engineer, visitor, etc.) to be considered a USQ. In addition to requiring that such consequences of normal and off-normal operational needs are approved by license amendment, this interpretation would render the existing regulation and guidance on the issue ineffective, since any non-conservative changes within the regulatory basis would need to be addressed through the plant licensing process.

Corrective Steps That Have Been Taken and the Results Achieved

The PNPP change process as prescribed in Plant Administrative Procedure (PAP)-0305, "Safety Evaluations" is based primarily upon the guidance and philosophy espoused in NSAC-125, "Guidelines for 10 CFR 50.59 Safety Evaluations," dated June 1989. As the NRC stated at the October 7 meeting and reiterated in the letter transmitting the Notice of Violation, the definition of margin of safety as discussed in these documents is more conservative than the regulation requires. By the PNPP program, the reviewers should have concluded that the change resulted in a reduction in the margin of safety, since the NRC Safety Evaluation Report (SSER 7) established the 7-day supply as the reviewed ECC surge tank design. Although CEI management does not agree

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that the regulatory definition of a USQ was exceeded, CEI management agrees that this situation would constitute a USQ by the conservative NSAC-125 definition.

The PNPP program was not followed, and the expectations of CEI management were not met. Accordingly, several corrective actions are appropriate and are described below.

A self-assessment of the PNPP 50.59 program was performed, drawing upon previous evaluations of performance such ab engineering assessments of specific safety evaluations; review of Company Nuclear Review Board Safety Evaluation Review Subcommittee minutes; Independent Safety Engineering Group evaluations; and NRC Notices of Violation. The self-assessment concluded that previous corrective actions performed as a result of other assessments dio traprove the program and program results; however, the overall rate of improvement has not been sufficient to stay abreast of evolving NRC and industry interpretations. The self-assessment recommended benchmarking other utilities with known effective safety evaluation programs, eliciting improvement areas, and developing implementation attributes to ensure success at PNPP.

The CEI Senior Management Team endorsed several program improvement goals which include an enhanced training program, a solid understanding by program participants of their responsibilities, and improved over ight processes. These goals are intended to result in consistently high quality safety evaluations with a high level of assurance that potential USQs are recognized and addressed appropriately.

Corrective Steps that Will be Taken

To accomplish these goals stand above, a plan has been developed to :

- Determine which utilities have implemented a safety evaluation program which are considered to be in the upper quartile for performance.
- · Benchmark those utilities with respect to implementation of that program.
- Utilize the best attributes of those upper quartile utilities to implement a similar program at PNPP.
- Ensure that recent industry and regulatory guidelines are incorporated, as applicable, into the implementation program.

The current plan has scheduled plant visits during the first quarter of 1998 with improvement activities started by the end of the first quarter 1998.

Cenclusion

For the reasons stated herein, CEi does not believe that a violation of 10 CFR 50.59 has occurred in that CEI did not fail to identify a USQ (as defined in regulation) for the ECC surge tanks. Since no change to the facility actually occurred, and since throughout the discussions of this issue, no question about the maintained operability of the ECC system has been raised, it is CEI's position that there was no cafety significance associated with this event. Therefore, CEI denies the Notice of Violation as written. However, CEI acknowledges the failure to effectively follow PNPP's more conservative programmatic requirements for conducting safety evaluations.

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ANSWER TO A NOTICE OF VIOLATION

Pursuant to the provisions of 10 CFR 2.205, and in accordance with the requirements superth in the NRC letter of November 18, 1997, this "Answer to a Notice of Violation is provided. The Cleve," Sectric Illuminating Co. (CEI) denies, in part the violations cited.

Specifically, CEI accepts Violation A (EA 97-047), which involved Reactor Recirculation Flow Control Valve Hydraulic Power Unit. perspective on the importance of corrective actions and the need the CEI does not conteat the imposition of a Civil Penalty in the amo

CEI denies Violation C (EA 97-430), concerning a safety evalua non-conforming condition, specifically, leakage in excess of the) Cooling (ECC) System as described in the Updated Final Safety . denial is detailed in the "Reply to a Notice of Violation" provided of 10 CFR 2.201. On the same basis, CEI requests full remission \$50,000. Additionally, CEI incurred a significant expense of alr. 1997 forced outage by ten days to resolve the ECC system leak a regarding the tornado missile analysis and ECC temperature shutdown was based on then current NRC policy preventing subsequently overturned in a revision to Generic Letter 91g

Accordingly, an electronic funds transfer in the amount payment of the civil penalty associated with Violation A

opriate restoration to service of a ment concurs with the NRC ention to reactivity manipulations.

,ustify continued acceptability of a mptions for the Emergency Closed eport (USAR). The basis for the iment 1 pursuant to the requirements posed Civil Penalty in the amount of million dollars by extending the June as well as other NRC concerns alve issues. This extension of the forced p with existing USQ's. That policy was

30 was made on December 17, 1997, for