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U.S. Nuclear Regulatory Commission  
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Perry Nuclear Power Plant  
Docket No. 50-440  
Response to Notice of Violation

Gentlemen:

This letter provides the Perry Nuclear Power Plant response to the Notice of Violation contained within Inspection Report 50-440/94009 dated July 22, 1994. The report documented the results of the special announced team inspection by the NRC Perry oversight team conducted April 22 through May 27, 1994.

The response to the Notice of Violation is provided by Attachment 1. In addition, the letter transmitting the Notice of Violation requested additional information regarding specific actions taken as a result of weaknesses identified in the Shutdown Risk program. This information is included as Attachment 2.

If you have questions or require additional information, please contact Mr. James D. Kloosterman, Manager - Regulatory Affairs, at (216) 280-5833.

Very truly yours,

RAS:DHL:sc

cc: NRC Project Manager  
NRC Resident Inspector Office  
NRC Region III

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Response to  
Notice of Violation

50-440/94009-01  
Restatement of the Violation

10 CFR Part 50, Appendix B, Criterion V, requires, in part, that activities affecting quality be prescribed by and accomplished in accordance with, documented instructions, procedures, or drawings appropriate to the circumstances. These instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Contrary to the above:

- a. On May 18, 1994, licensee procedures were not appropriate to the circumstances in that they did not remind operators of the need to verify the actual status of valve 1E12-F0042C while it was being controlled by an operations administrative control tag to ensure compliance with Technical Specification 3.6.4 action statement.
- b. On May 3, 1994, during the testing of replacement 480 volt AC to 120 volt AC regulating transformer as described in Work Order No. 94-1858, appropriate acceptance criteria were not provided for the output voltage of the transformer. Instructions were also not provided to vary the output load between no load and full load to adequately test voltage regulation.
- c. Perry Administrative Procedure PAP-1401, Revision 7, effective December 1, 1993, Section 6.3.1.2, states that a circuit interrupting device or mechanical break shall be opened and red tagged to isolate equipment from a source of voltage potential.

On April 23, 1994 a circuit interrupting device, disconnect EF1A07-L, was found open to isolate equipment from a source of voltage potential without being red tagged.

- d. On April 24, 1994, work order 94-246 did not contain appropriate guidance for installation of fuses consistent with the plant practice that operations personnel install fuses.
- e. On April 21, 1994, electricians worked on HCU 1C11D4647 without documented instructions. The documented instructions called for work to be accomplished on HCU 1C11D4247.
- f. On April 22, 1994, a seismic mounting bolt was removed from the Division 1 Emergency Diesel Generator Turbocharger without documented instructions.

Acceptance of Violation

Cleveland Electric Illuminating Company accepts the violation as written.

## Introduction

After the occurrence of these events but prior to the receipt of the notice of violation, PNPP responded to Violation 50-440/94006-02 by letter dated July 15, 1994. In that response, specific corrective actions were detailed to improve performance in the areas of procedural adherence and procedural deficiencies.

Based on that previous violation and our response and the additional examples cited in this violation, the need for improvement in the areas of procedural adherence is clearly recognized.

The following provides a specific response to each example for this violation followed by a restatement of the previous commitments to programmatic improvements affecting procedures.

### **94009-01a - 1E12-F0042C**

## Reason for the Violation

The reason for this violation is attributed to a program weakness in that the Plant Administrative Procedure (PAP) for tracking Limited Conditions for Operations does not include a provision to verify that components placed under Operations Administrative Control for compliance with Technical Specification 3.6.4 are returned to the Technical Specification required status following evolutions for which the components are manipulated, as permitted by the Plant Administrative Procedure for safety tagging.

## Corrective Action Taken and Results Achieved

Immediate corrective action for the event was to suspend core alterations from the time at which the 1E12-F0042C valve was discovered to be energized on May 22, 1994, at 0130, until compliance with Technical Specification 3.6.4 action statement was established by de-energizing the valve at 0150 on May 22, 1994.

## Actions to Avoid Further Violations

Pending program/policy revisions, a Standing Instruction was implemented to require operator review of the status of components placed under Operations Administrative Control prior to changes in plant mode to verify that the condition of the components is in compliance with Technical Specification required status.

A change to Integrated Operating Instruction (IOI) 1, Cold Startup, was completed July 17, 1994 to require operator review of the status of components placed under Operations Administrative Control prior to changes in plant mode to verify that the condition of the components is in compliance with Technical Specification required status. LER 94-013 details further corrective actions in this area.

Additionally, licensed plant operators will receive training to this event, as previously detailed in LER 94-013.

Date When Full Compliance Will Be Achieved

Full compliance was achieved at 0150 on May 22, 1994 when 1E12-F0042C was de-energized.

**94009-01b - Transformer acceptance criteria**

Reason for the Violation

The reason for this violation is failure to follow procedure; the appropriate testing and acceptance criteria were not included in Work Order 94-1858 as required by Perry Administrative Procedure (PAP) 0905. This work order provided for the removal and replacement of the Division 2 regulating 120 VAC transformer which had failed on May 1, 1994.

The specific testing requirements outlined in the Performance Test Section did not adequately identify the appropriate acceptance criteria for the output voltage of the transformer. No requirements were provided with acceptance criteria to vary the output loads of the transformer between no load and full load to verify and demonstrate voltage regulation.

Corrective Actions Taken and Results Achieved

Revision 2 of work order 94-1858 was issued on May 4, 1994 to amend the performance test to include a supplemental retest with appropriate acceptance criteria for voltage output regulation from no load to full load conditions. This retest was successfully completed on May 5, 1994.

Actions to Avoid Further Violations

The weaknesses identified as part of this violation will be included in the formal summary report as part of the response to the Condition Report (CR 94-0626) that was initiated for the transformer failure. Appropriate Engineering and Maintenance personnel will be required to receive training to this event as part of the CR 94-0626 Corrective Actions.

Date When Full Compliance Will Be Achieved

Full compliance was achieved on May 5, 1994 when the transformer was successfully tested as required by revision 2 to work order 94-1858.

**94009-01d - Open disconnect without tag**

Reason for the Violation

The reason for this violation is personnel error inattention to detail/failure to follow procedure. The original safety tag for valve 1C41-F001A and disconnect EF1A07-L was removed by a safety tag modification authorized on March 16, 1994. At that time, authorization was obtained from the work group to delete the tag out riders (rider numbers 3 and 4) for scheduled work on 1C41-F001A (work order 93-4037). On April 23, 1994, when the condition was identified, work order 93-4037 remained to be completed. Further, the safety tag riders were not cleared when the safety tag was modified even though the safety tag was deleted. During the time period from March 19 to April 23,

1994, MOV testing was performed on 1C41-F001A which involved placing MOV test tags to control valve position and several temporary lifts were performed to support on-going work activities which also referenced riders 3 and 4 for temporary lift concurrence.

#### Corrective Actions and Results Achieved

When the condition was identified, work was stopped by the Control Room Unit Supervisor until safe work conditions could be achieved. Condition Report 94-555 was initiated to investigate the event. A new safety tag was authorized on April 24, 1994 to complete work order 93-4037 associated with 1C41-F001A.

#### Actions To Avoid Further Violations

A Safety Tagging Improvement Team has been established to review the Safety Tagging program and open Condition Reports involving safety tagging. Condition Report 94-555 will be reviewed by the Safety Tagging Improvement Team. The Safety Tagging Program will be revised by January 31, 1995 based on recommendations from the Improvement Team.

Other actions taken to address concerns with the Safety Tagging Program were detailed in the previously cited letter dated July 15, 1994. This included training to the implementation and use of the safety tagging program, to elevate the concern and attention given to compliance with the safety tagging program and to emphasize managements expectations for compliance with the program. Condition Report 94-555 was an example of safety tagging problems cited in this training.

#### Date When Full Compliance Will Be Achieved

Full compliance was achieved on April 24, 1994 when a new safety tag was authorized to complete work order 93-4037.

#### **94009-01d - Fuses not installed**

##### Reason for the Violation

The reason for this violation are inadequate instruction/inadequate program and personnel error, failure to follow work order instructions.

The fuses in the transformer supply disconnect switch were not installed as required by work order 94-246. The work order that replaced the fuses included instructions to "INSTALL 40A FRS-R FUSES IN NEW DISC.SWITCH." The work order planner did not intend for the electrician to install the fuses in the disconnect switch but to place the fuses in the MCC bucket for the new disconnect switch. However, the work order instruction required the installation of the fuses and no other methods to control the fuse installation were provided.

The electrician performing the work order did not install the fuses, but placed the fuses in the bottom of the MCC bucket. The electrician then signed the work order step as completed. Previous training to the electricians had emphasized that only Operations Section personnel could install fuses in the plant. The electrician believed that "INSTALL" meant to place the fuses in the

bottom of the MCC. The electrician signed as complete the step to install the fuses in the new disconnect switch without performing that step, or obtaining a revision to the work order.

As stated above, previous training to the electricians had included the emphasis that electricians are not to install fuses in permanent plant equipment. PAP-1401, "Safety Tagging," gives Operations personnel the responsibility for removing and installing fuses for safety purposes. The Operational Fuse Policy for replacing blown fuses is contained within PAP-0201, "Conduct of Operations," gives Operations authority to replace blown fuses.

However, no clear policy is available for installation of fuses during design modifications.

#### Corrective Actions and Results Achieved

The fuses were properly installed, and bus EK-1-B1 was energized on April 22, 1994.

#### Actions to Avoid Further Violations

The Operations section will develop and communicate a clear policy on fuse installation. This action will be completed by December 31, 1994.

#### Date When Full Compliance Will Be Achieved

Full compliance was achieved when the transformer was returned to service on April 22, 1994.

**94009-01e - HCU 1C11D4647**

#### Reason for the Violation

The reason for this event is personnel error, inattention to detail/failure to follow procedure. The electricians failed to properly identify the component prior to performing work.

On April 21, 1994, a total of seven Hydraulic Control Units (HCU) work orders were turned over to the night shift electrical superintendent with instructions to reterminate wiring within all seven HCU's. Work Order 93-2667 was for HCU 1C11D4247. This task was assigned to a crew of two electricians who were familiar with the work to be performed.

The triple verification process required by Maintenance Administrative Instruction (MAI) 0502 was completed on April 18, 1994 by the craft that initially started work order 93-2667. In addition, a double verification of wire identification numbers is required prior to retermination as outlined in General Maintenance Instruction (GMI) 0122. However, due to the generic nature of the wire identification numbers (i.e., same wire #'s used in all HCU's), this step alone, would not identify the component MPL number being worked.

Initially, six HCU's were reterminated as required with the exception being 1C11D4247. When the electricians entered the area to complete the last retermination, they found the area heavily congested with personnel working on



nearby HCU's. As a result, Electrician B stood back from the HCU and did not witness the HCU cover removal.

On the outer cover that must be removed to complete retermination, there are clear markings identifying the HCU number. Once the cover is lowered to expose the internals, the identifying lamacoid sign is out of view. This cover was removed by Electrician A while Electrician B was not present. When Electrician B was present to provide double verification of wire identification numbers, as required by procedure GMI-122, the cover was down and the HCU's identifying tag was not readily accessible. In this configuration, Electrician B did not have ready access to the HCU identification markings and as stated previously, the generic wiring numbers of the HCU's would not aid in identification of the HCU's MPL number. The electricians proceeded to reterminate what they thought was HCU 1C11D4247 but was actually 1C11D4647.

#### Corrective Actions and Results Achieved

Upon discovery of the improperly terminated HCU, notification was made to the responsible supervisors and two electricians were sent to restore HCU 1C11D4647 to the prior determined configuration. Retermination of HCU 1C11D4247 was completed the following shift.

Disciplinary action was taken against both electricians.

#### Actions to Avoid Further Violations

The personnel involved have been counseled on the importance of component identification prior to starting work. They were also counseled with regard to work environment issues which could interfere with the successful completion of the task at hand.

This incident was discussed at length during the Electrician's gang box safety meeting held on April 28, 1994.

#### Date When Full Compliance Will be Achieved

Full compliance was achieved when HCU 1C114647 was determined and HCU 1C114247 was terminated as required by the work procedures.

#### **94009 - 01f - Turbocharger Bolt**

#### Reason for the Violation

The reason for this violation is personnel error, failure to follow procedure. The work group failed to stay within the parameters of the work procedure. The foreman failed to realize that the work procedure did not allow for the backing out of a bolt.

On April 22, 1994, the Superintendent responsible for Diesel maintenance was requested by the responsible system engineer to complete a Repetitive Task for the Division 1 Diesel Generator. The Superintendent read the task and gave it to his foreman to review prior to performance of the task.

The repetitive task description consisted of six specific tasks. Some of the

tasks were to be performed per specific steps in a Preventative Maintenance Instruction (PMI). Others were to be performed as written in the task description.

The foreman and crew reviewed the package, and went to the Division 1 Diesel Generator to identify the Turbo Bracket Mounting Bolts. Step 5 of the repetitive task stated:

"Check all Turbo Bracket Mounting Bolts for tightness; except for the 4 bottom turbo to pedestal bolts. Retorque IAW Attachment #1 of PMI-0041."

The work crew measured the head size and were able to determine the bolts to be 5/8" diameter, and went to the tool trailer for the appropriate tools.

The foreman referred to "Attachment 1" in PMI-0041 which listed two different torque values for 5/8" diameter bolts, based on the number of threads per inch. The information on how many threads per inch these bolts had was not in the PMI or the repetitive task paperwork. The foreman suggested they could back a bolt out to determine which torque value to use and sent part of the crew for a torque wrench. He left the Repetitive Task with one member of his crew at the Diesel Tool Trailer to wait for the wrench. The foreman then went into another Diesel Trailer to attend to other matters.

The Millwright at the tool room grew impatient waiting for the others, and thought he could help out by checking the threads on the bolt. With the Repetitive Task package still at the tool room, he returned to the Division 1 Diesel Generator Room and removed a turbo mounting bracket bolt to count the threads. A representative from Independent Safety Evaluation Group entered the room at this time and questioned what he was doing and where was his work procedure. The Millwright reinstalled the bolt, and tightened it snug tight. Performance of the repetitive task was halted.

#### Corrective Actions and results Achieved

The bolt was replaced snug tight, and performance of the repetitive task was halted. The repetitive was completed on May 10, 1994 and the bolt retorqued.

#### Actions To Avoid Further Violations

The Work Supervisor, the Foreman, and the Diesel Millwright crews were instructed on April 23, 1994, to only perform work in strict compliance with their work document. They were coached and counseled on what that means and how it is to be interpreted.

Disciplinary action was taken against the Foreman and the Millwright for failure to stay within the scope of the work document, and not having the document at the job location.

Group training was held between April 22 through the 26, 1994, with Supervisors and Craftsmen on both shifts to clarify the meaning of strict procedural compliance.



The repetitive task will be revised to provide more specific instructions for checking bolt tightness.

Date When Full Compliance Will Be Achieved

Full compliance was achieved when the repetitive task was completed on May 10, 1994.

Restatement of Previous Corrective Actions

The following corrective actions are in addition to the specific corrective actions delineated in the response to each example above, and will improve the overall performance in the areas of procedural adherence and procedural deficiencies.

The Vice-President, Nuclear has issued a policy statement that clarifies and reinforces the requirement for procedural adherence.

Meetings have been held between the Vice-President, Nuclear and site employees and between department directors and employees which included discussions emphasizing management expectations regarding adherence to procedures.

A procedure review checklist has been implemented to improve the quality of procedures.

A study of the process which governs procedure development, review, approval and revision has been completed. The recommendations from this study include activities which can improve the quality of the process and the resultant procedures. A task force will be formed to assess and develop an implementation strategy based on the recommendations.

## Shutdown Risk Management

As stated in the cover letter to the Notice of Violation, a number of weaknesses were identified in the management of shutdown risk. As requested, this attachment includes the specific actions that have been or will be taken to address the shutdown risk weaknesses.

### Restatement of the Concern

A number of weaknesses were also identified. These included management's communication of its expectations for shutdown risk to the plant staff and incorporation of those expectations into procedures, supervisory response when workers raised shutdown risk issues, and understanding of responsibilities for implementing shutdown risk policies. Additionally, a significant weakness identified was that the EDG's were not included in the defense in depth specification for electrical power availability. Further, the principle administrative procedure which discussed shutdown risk was deficient in that it failed to define several key terms and did not discuss the critical feature of reactivity control.

### Response

Two Perry documents, Perry Administrative Procedure PAP 0115 "Outage Scheduling" and a guidance document, "Perry Nuclear Power Plant Guidelines for Shutdown safety", developed by a cross-functional shutdown risk assessment team address requirements for shutdown risk management during outages. The guidelines provide a mechanism for independent assessment personnel to advise plant personnel on adherence to Perry and industry positions for the minimization of reactor fuel damage risk during outage periods. The complete reactor core offload during the recent refueling outage created a condition where the guidelines continued to provide for safety of the offloaded fuel but did not clarify management expectations for the continued availability of the diesel generator backed ECCS called for in the Outage Scheduling procedure. Additionally, management expectations for the availability of Emergency Diesel Generators for electrical system reliability were not clearly stated in either procedure.

The Shutdown Risk Guidelines were revised during the outage. The most significant revision was to reflect management philosophy on key safety system availability. Some restrictions were placed on system and component conditions under which the system could be considered available. Additionally, diesel generator requirements were reflected in the Electrical Power requirements sections of the Shutdown Risk Guidelines and additional guidance was provided for Reactivity controls and key terms were defined. The Shutdown Risk Guidelines will become an attachment to the Outage Scheduling administrative procedure prior to the next refuel outage. This will provide for plant review and training as well as consolidating management expectations for shutdown risk management into one document.

Once the Shutdown Risk Guidelines were revised, training was provided to key outage organization personnel and operating crews. Additionally, a status board for required Shutdown Safety Systems was placed in the Control Room. The Shift Supervisor and the Shutdown Safety Advisor discussed the available systems each shift.