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Al Kaplan

VICE PRESIDENT
NUCLEAR GROUP

April 29, 1988
PY-CEI/NRR-0845 L

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Perry Nuclear Power Plant
Docket No. 50-440
Response to Notice of
Violation 50-440/87025-03

Dear Gentlemen:

This letter acknowledges receipt of the Notice of Violation contained within Inspection Report 50-440/87025 dated March 31, 1988. The report identified areas examined by Mr. W. Kropp and others during their inspection conducted from January 11, 1988 through February 9, 1988 of activities at the Perry Nuclear Power Plant, Unit 1.

Our response to Notice of Violation 50-440/87025-03 is attached. Please call should you have any additional questions.

Very truly yours,

Al Kaplan
Vice President
Nuclear Group

AK: cab

Attachment

cc: T. Colburn
K. Connaughton
H. Miller - USNRC, Region III

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50-440/87025-03

Restatement of Violation

10 CFR 50, Appendix B, Criterion V, as implemented by PNPP, Operational Quality Assurance Plan, Section 5.0, requires that activities affecting quality be prescribed by instructions or procedures and accomplished in accordance with those instructions or procedures. Section 5.0 further requires procedures to include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Contrary to the above:

- A. Procedure PAP-0906, "Control of Maintenance Section Preventive Maintenance," Revision 1, did not include criteria to make technical evaluations for rescheduling preventive maintenance activities. As a result, repetitive tasks (preventive maintenance) already several months past due, were rescheduled for nine motor-operated valves in the residual heat removal and liquid radwaste systems without evaluations of the effects the delays could have on plant safety, operability, or reliability. (440/87025-03B)
- B. The licensee failed to fully accomplish Preventive Maintenance Instruction, PMI-0030, "Maintenance of Limitorque Valve Operators," Revision 1, as follows:
 - o The inspector observed that valve stems for several residual heat removal system and liquid radwaste system valves were lubricated with Neolube although PMI-0030 specified Nebula EP0.
 - o There was no objective evidence that two residual heat removal system valves had been electrically and manually cycled as specified in the post maintenance requirements of PMI-0030. (440/87025-03C)
- C. The licensee failed to properly implement Administrative Procedure PAP-0905, "Work Order Process," Revision 7, which outlined the requirements for processing work orders (WO) from initiation to closure as follows:
 - o WO 87-9677 - Summary description did not accurately reflect the activity performed;
 - o WO 87-5727, 87-10390, 88-0080 - Incomplete or incorrect corrective action indicated on WO Closing and Summary Sheet;
 - o WO 87-6175, 87-7385, 87-8746, 87-9361, 87-9498, 87-9677, 87-10213 - Incorrect or inadequate immediate failure cause identified on the WO Closing and Summary Sheet;

- o WO 87-2249, 87-8746, 87-9361, 87-9677, 87-10390 - Incorrect or incomplete WO closing codes;
 - o WO 87-4325, 87-8298, 87-8597, 87-9677 - Incorrect or incomplete Master Part List (MPL) numbers; and
 - o WO 87-9361 - Inadequate closing summary on the WO Closing and Summary Sheet. (440/87025-03A)
- D. The licensee failed to fully accomplish Nuclear Quality Assurance Department procedure, NQAD 1840, Revision 2, "Audit Performance," Section 6.2, which required that deficiencies noted during audits be documented on Action Requests. Deficiencies identified during Audit 87-12, "Effectiveness of Corrective Action" were listed as observations; therefore, the established corrective system was bypassed. One observation pertained to continued untimely and ineffective corrective action, which prior to Audit 87-12, had also been identified as a concern by the licensee's QA organization and the NRC. (440/87025-03D)

This is a Severity Level IV violation (Supplement I).

Corrective Action Taken and Results Achieved

- A. Failure to document technical evaluations for rescheduling preventive maintenance activities.

CEI agrees that PAP-0906 did not specifically include criteria to make the technical evaluations nor require documentation of the evaluations. However, system engineers involved in rescheduling repetitive tasks have used engineering judgment, verbal instructions from unit leads, and/or informal desk-guide type instructions when performing this activity. The issue is not whether technical evaluations were performed for rescheduled repetitive tasks, but whether this evaluation was documented. In order to allow for documentation of the technical evaluation, a Preventive Maintenance Deferral Evaluation/Justification Sheet has been developed and is being incorporated into the appropriate repetitive task procedures. This form provides for a documented "Justification for Reschedule" and "Effect on Component/Consequences of Non-performance" for safety-related repetitive tasks. Also, informal desk-guide instructions are being developed which will provide the system engineer with a list of appropriate questions to ask when considering approval or denial for rescheduling of a task. The form and the desk-guide instructions will provide consistent documented technical justification of approval or denial for rescheduling of safety-related repetitive tasks.

B. Several examples were identified of failure to fully accomplish Preventive Maintenance in accordance with PMI-0030.

1. The inspectors observed inconsistencies in valve stem lubrication. CEI agrees that inconsistencies existed among the as-found conditions as well as the procedures and instructions which control the lubrication of these valve stems. As a result of these inconsistencies, procedures have been revised and training has been performed for maintenance personnel involved in this activity. These inconsistencies were also evaluated as described below. An engineering evaluation was performed to determine the significance of valve stems lubricated with Neolube instead of Nebula EPO. The conclusion was that all of the valve stems identified were adequately lubricated in accordance with vendor recommendations. However, improvements in lubrication practices should be made. The vendor of these valves recommends Neolube as an acceptable valve stem lubricant. Neolube is a graphite type lubricant that dries upon application to the stem, leaving a fine dry graphite film coating. In cases where only Neolube exists on the valve stems, it should be recognized that PMI-0030 did not require stem lubrication if the existing lubrication was determined to be sufficient. Additionally, for MOVATS testing of these valves per General Engineering Instruction (GEI)-0056, Neolube was utilized as the valve stem lubricant. In cases where both Neolube and Nebula EPO exist on the valve stem, it is possible that lubrication with Nebula EPO was deemed necessary during a performance of PMI-0030. This PMI did not require cleaning of the stem before applying lubrication, thus potentially resulting in both Neolube and Nebula EPO being present. An engineering evaluation of the compatibility of the two lubricants determined that mixing of the two lubricants will have no deleterious effect on the valve or its operability. For the case where PMI-0030 did not require lubrication of the MOV upper bearing, a review of the vendor recommendations determined that the upper bearing should be lubricated periodically, resulting in a change to PMI-0030 on January 29, 1988.

The following procedure changes and training have been completed. PMI-0030 as revised January 29, 1988 and GEI-0056 was revised January 28, 1988 to be consistent in future lubrication activities. For future Rockwell Hermaseal valve stem lubrication, Nebula EPO will be used. For future stem lubrication of rising stem gate and globe valves, Never-Seez will be used. Never-Seez is a lubricant that leaves a wet film coating which does not dry upon application. Mobilgrease 28 will be used in limit switch gear boxes, and Nebula EPO will be used on operator main housings and upper bearing grease fittings. Also, the instructions now require that when a valve stem needs to be relubricated, it shall first be thoroughly cleaned and inspected prior to relubrication. Appropriate maintenance workers have been trained to these changes.

2. The inspectors found no objective evidence of valve cycling after performance of PMI-0030. Research into the work history of the subject RHR valves determined that the valves have been cycled since the performance of the PMI. This was performed on January 9, 1988 in accordance with the periodic Technical Specification surveillance to verify operability, and no problems were experienced. PMI-0030 has been revised (effective April 29, 1988) to specify that the Control Room Unit Supervisor shall establish retest requirements. A further revision to PMI-0030 will provide for documentation of retest completion.

C. Several examples were identified of inadequate and/or incomplete documentation during the review of completed WOs.

1. WO 87-9677: Summary description did not accurately reflect the activity performed.

This WO was performed to troubleshoot and repair a Residual Heat Removal (RHR) pump not initiating on high heat exchanger level as expected. The cause of this problem was determined to be a level transmitter 1E12-N008A being out of calibration. The corrective actions taken with the WO were recalibration of the transmitter and a circuit loop check. The closing summary as stated on the WO Closing and Summary Sheet was, "Recalibrated transmitter and loop checked Sat." PAP-0905 in section 6.7, Work Order Package Closeout, requires the planner or work supervisor to "...write a short, concise summary statement of the work actually performed..." We believe the requirement of PAP-0905 was met and the summary description did accurately reflect the activity performed. The only enhancement that could be made to the summary would be to include the transmitter MPL number. However, this MPL number was adequately reflected on the same Closing and Summary Sheet within the corrective action summary description.

2. WO 87-5727, 87-10390, 88-0080: Incomplete or incorrect corrective action indicated on WO Closing and Summary Sheet.

- a. WO 87-5727 is still in the planning stages; no work has been performed on this WO; and thus, no Closing and Summary Sheet has been nor should have been complete for this WO. We believe that the WO number should have been 87-5722 in your inspection report. The WO Closing and Summary Sheet for this WO initially stated in the corrective action summary, "All work completed per the job traveler; change out and MOVATS per NR PPDS-2554". This was deemed insufficient and was revised to "Replaced Limitorque operator with rebuilt spare, performed MOVATS on actuator per GEI-0056, adjusted torque switch per SCR 1-87-1576, and installed new limiter plate". This change has been incorporated into the PPMIS history file for this WO.

- b. WO 87-10390 was performed to troubleshoot intermittent relay problems in the Feedwater Control circuitry and to change three relays as directed by Design Change Package (DCP) 87-807. The WO Closing and Summary Sheet initially stated in the corrective action summary, "Implemented DCP 87-0807". This was deemed insufficient and was revised to, "Replaced existing time delay relays with Potter-Brumfield relays per DCP 87-807. Calibrated relays and obtained voltage readings for operating point of PDU output switch. Cleaned contacts and calibrated associated relays in control panel". This change has been incorporated into the PPMIS history file for this WO.
 - c. WO 88-0080 was performed to replace the charge for the Standby Liquid Control squib valve per Surveillance Instruction (SVI)-C41-T2002. During the performance of this WO power indication problems were observed. Troubleshooting of the circuitry identified two blown fuses which were promptly replaced. The WO Closing and Summary Sheet corrective action summary initially only described the squib valve charge replacement. This was deemed insufficient and was revised to include the circuitry troubleshooting and replacement of identified blown fuses. This change has been incorporated into the PPMIS history file for this WO.
3. WO 87-6175, 87-7385, 87-8746, 87-9361, 87-9498, 87-9677, 87-10213: Incorrect or inadequate immediate failure cause identified on the WO Closing and Summary Sheet.
- a. WO 87-6175 was performed to modify the stem and manufacture a new stem nut for valve 1E12-F0024A in accordance with DCP 87-463. The WO Closing and Summary Sheet initially stated in the immediate failure cause summary, "Modification of valve stem". This was deemed incorrect and was revised to "N/A" since the WO was only implementing a design change. This change has been incorporated into the PPMIS history file for this WO.
 - b. WO 87-7385 facilitated the mechanical portion of work required to implement DCP 87-162A, which replaced the 1E22-C0004A diesel engine with an electric motor. The WO Closing and Summary Sheet initially stated in the immediate failure cause summary, "Replace diesel engine (Petter diesel) due to diesel failure". This was deemed incorrect and was revised to "N/A" since the WO was only implementing a design change. This change has been incorporated into the PPMIS history file for this WO.
 - c. WO 87-8746 was performed to troubleshoot and repair the Division II Diesel Generator due to the field not flashing. The WO Closing and Summary Sheet initially stated in the immediate failure cause summary, "Diesel would not field flash". This was deemed incorrect and was revised to "Unable to identify/unknown" since the troubleshooting failed to identify any problems. This change has been incorporated into the PPMIS history file for this WO.

- d. WO 87-9361 was performed to troubleshoot and repair a leak from a snubber located above an RHR pressure transmitter 1E12-N0050B. The WO Closing and Summary Sheet initially stated in the immediate failure cause summary, "steam leak at snubber". This was deemed insufficient and was revised to "Instrumentation tubing connection leaking. Loose connection" since the problem was identified as a loose tubing connection. This change has been incorporated into the PPMIS history file for this WO.
 - e. WO 87-9498 was performed to troubleshoot a Division II Diesel Generator failure to start during the performance of SVI-R43-T1318. The WO Closing and Summary sheet initially stated in the immediate failure cause summary, "Diesel Div. II did not see pneumatic start". This was deemed insufficient and was revised to "Not identified - Suspect solenoid start valves 1R43-F0037B and F0030B" since the troubleshooting failed to pinpoint the cause. This change has been incorporated into the PPMIS history file for this WO.
 - f. WO 87-9677 was performed to troubleshoot and repair incorrect level indication for a RHR heat exchanger. The WO Closing and Summary Sheet initially stated in the immediate failure cause summary, "RHR HX A level indication is low". This was deemed insufficient and was revised to "Level transmitter 1E12-N0008A out of calibration" since the calibration problem is the cause which would be utilized in Failure Analysis trending. This change has been incorporated into the PPMIS history file for this WO.
 - g. WO 87-10213 was performed to repair bad connectors for two LPRMs reading downscale. The WO Closing and Summary Sheet states in the immediate failure cause summary, "Bad connectors". This was deemed adequate since the problem was downscale LPRMs and the immediate cause was bad connectors. Identification of the cause of bad connectors would be part of the root cause evaluation as part of the Failure Analysis program and is thus outside the scope or requirements of PAP-0905.
4. WO 87-2249, 87-8746, 87-9361, 87-9677, 87-10390: Incorrect or incomplete WO closing codes.

The ineffectiveness of WO closing codes was identified by CEI during the INPO Maintenance Self Assessment which was completed in November of 1987. These codes were initially designed to aid in failure analysis. However, due to recommendations provided from the Failure Analysis committee and the ongoing development of the Reliability Information Tracking System (RITS), the decision was made to eliminate many of these PPMIS closing codes from the PAP-0905 work order process. The failure analysis program needs will be better supplied through a centralized evaluation of the existing WO closing summaries.

5. WO 87-4825, 87-8298, 87-8597, 87-9677: Incorrect or incomplete Master Part List (MPL) numbers.

The concern over MPL numbers chosen during WO initiation was identified by CEI during a QA audit report PIO 87-12, "Effectiveness of Corrective Action", issued July 29, 1987. PAP-0905 states that WOs should, when practical, address only one MPL number, and that single MPL numbers need not be addressed on WOs written to fill and vent instrumentation, for troubleshooting, or on standing WOs.

- a. WO 87-4825 was written to determine the cause of a Reuter-Stokes indexer failure. The MPL number utilized to open this WO was "N/A" since the indexer was not installed in the plant and thus had no MPL number. This indexer was removed from the field and replaced with a new indexer on March 26, 1987 in accordance with WO 87-2620. The MPL number used for WO 87-2620 was 1C51-J0002C and the failure cause was identified as "unknown, WO 87-4825 written to troubleshoot failed indexer". WO 87-4825 could not have had a MPL number assigned to a salvaged component no longer installed in the field. However, to ensure identification of this WO during future trending or failure analysis, the work summary specified the MPL number of the component when it was installed in the field and also referenced WO 87-2620 as the WO which originally removed the component from the field. Therefore, we believe that this WO was written properly and is not an example of a violation.
- b. WO 87-8298 was written to troubleshoot a contact failure to open on relay 1E12-K42. The MPL number utilized to open this WO was the system MPL 1E12. The Plant Equipment Master-file System (PEMS) which ties into PPMIS to provide equipment data based on the MPL number input, does not contain MPL numbers for relays. Therefore, the identification number for this relay could not have been used as the WO initiating MPL number. However, to ensure identification of this WO during future trending or failure analysis, the work summary specified the problem as a relay 1E12-K42 failure to open. Therefore, we believe that this WO was written properly and is not an example of a violation.
- c. WO 87-8597 was written to troubleshoot a low temperature indication for the Division I Diesel Generator lube oil. Since the problem had not yet been identified, the MPL number utilized to open this WO was the DG lube oil system MPL 1R47. If a specific component were to be identified as the problem, the only way to change the MPL number would be to void the WO and then open a new WO with that MPL number. Nonetheless, troubleshooting failed to identify any problems. For future trending or failure analysis the suspected trouble components are well documented throughout this WO. Therefore, we believe that this WO was written properly and is not an example of a violation.

- d. WO 87-9677 was written to troubleshoot and repair incorrect level indication for a RHR heat exchanger. Since the problem was suspected to be the controller 1E12-R0604A, this MPL number was utilized to open this WO. Troubleshooting identified the level transmitter 1E12-N0008A as being out of calibration. Again, the only way to change a WO initiation MPL number is to void the WO and then open a new WO with the new MPL number. Since this is not required and extremely inefficient, this will not be done. However, to ensure identification of the WO during future trending or failure analysis, the corrective action identified in the Closing and Summary Sheet specifies the required recalibration of level transmitter 1E12-N0008A. Therefore, we believe that this WO was written properly and is not an example of a violation.
6. WO 87-9361: Inadequate closing summary on the WO Closing and Summary Sheet.

This WO was performed to troubleshoot and repair a leak from a snubber located above an RHR pressure transmitter 1E12-N0050B. The WO Closing and Summary Sheet initially stated in the closing summary, "No leakage anymore". This was deemed insufficient and was revised to "Reworked tubing fitting with reactor seal #5" since this was the actual work required to correct the problem. This change has been incorporated into the PPMIS history file for this WO.

- D. The concerns identified in Audit PIO 87-12 were listed as observations because they were subjective and related to effectiveness of implementation of the corrective action programs as opposed to compliance with the procedures. The Quality Assurance procedure, NQADI-1840, requires that each deficiency be documented on an Action Request (AR). As indicated in your report, our audit program has become more "performance related". The audit found compliance with the program to be adequate but the deficiency noted was "performance related". The line which separates deficiencies from improved performance is not well defined and is open to interpretation resulting in this deficiency being documented as a recommendation rather than an AR. As for your identified example, the audit organization has re-evaluated the effectiveness of the Condition Report program and noted an improvement in both number open and mean time for closure of Condition Reports. This improvement was partially due to actions taken as a result of the recommendations in Audit PIO 87-12.

Corrective Action To Avoid Further Violations

- A. The Preventive Maintenance Deferral Evaluation/Justification Sheet as discussed previously will be formally incorporated into IAP-0501 and PAP-0906, for Instrumentation and Control Section and Maintenance Section respectively, by June 30, 1988. The guidelines for performing a proper technical evaluation for rescheduling repetitive tasks will be provided to the appropriate engineers by May 30, 1988.

- B.
 - 1. As discussed previously, procedure changes relative to the valve lubrications were completed January 29, 1988. Training for appropriate maintenance personnel to these procedure changes has also been completed.
 - 2. The previously discussed revision to PMI-0030 to provide for documentation of retest completion will be complete by May 20, 1988.
- C. To ensure that the intent of the requirements of PAP-0905 is adequately met, the following corrective actions have been or will be implemented.
 - 1. Training is being provided to work supervisors and planners emphasizing their WO review responsibilities and the importance of providing adequate summaries on the WO Closing and Summary Sheet. This effort will be complete by May 31, 1988.
 - 2. A Reliability Information Tracking System (RITS) is being implemented manually and will be fully computerized by April 30, 1989. The objective of this program is to analyze component failures, and based on the results, recommend corrective actions to prevent recurrence. As a result of this program, changes are being made to PAP-0905, Work Order Process.
 - a. A Program Change Request (PCR) has been initiated to provide a section on the WO Closing and Summary Sheet for MPL numbers of all affected equipment. This will ensure a greater capture percentage when trending for failure analysis or planning a WO on a particular component. This PCR will be complete by November 30, 1988.
 - b. PAP-0905 was revised (effective March 1, 1988) to eliminate the need for the work groups to determine "Failure Category" and "Cause of Failure" closing codes. The RITS program will utilize the summaries within the WO package to consistently determine WO closing codes for trending purposes when deemed necessary.
- D. To ensure that the interpretation between deficiency and improved performance is made conservatively, QA guidelines have been revised to clarify the threshold for issuing ARs to include not only programmatic deficiencies or noncompliance, but also significant deficiencies which affect the effective implementation of processes. Appropriate QA personnel were trained to this change April 29, 1988.

Date of Full Compliance

Full compliance will be achieved upon full implementation of RITS by April 30, 1989.