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Wayne D. Romberg
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U-602841
4F.190

September 29, 1997

Docket No. 50-461

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

Subject: Reply to Notice of Violation in Clinton Power Station
NRC Inspection Report 50-461/97003 and EA 97-132

Dear Mr. Lieberman:

Illinois Power (IP) has reviewed the NRC's August 1, 1997, Notice of Violation and Proposed Civil Penalties related to safety-related electrical circuit breakers. This letter and accompanying attachments are IP's response required under 10 CFR 2.201. IP agrees that the identified violations occurred and has taken actions to correct the problem and prevent recurrence. IP asked for an extension to respond to this Notice of Violation in IP letter U-602824 dated August 29, 1997. Enclosed in that letter was a check for $110,000 for payment of the civil penalty.

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Attachment A to this letter addresses the Notice of Violation concerning the failure to take prompt and adequate corrective action to prevent hardened grease from affecting the performance of circuit breakers. Attachment B to this letter addresses the Notice of Violation concerning the use of unapproved lubricants and cleaners on safety-related circuit breakers.

The action being taken by IP extends significantly beyond these specific violations and their immediate causes. A comprehensive plan of action is described in IP's letter U-602825, dated August 29, 1997, to the NRC from W. D. Romberg to A. Bill Beach. The plan encompasses both specific problems with breakers and broader issues such as weaknesses in the Corrective Action Program and Preventive Maintenance Program that caused or contributed to breaker failures. Key elements of this plan are:

- Evaluation of the material condition of Clinton Power Station (CPS) electrical circuit breakers.

- Performance of any necessary additional maintenance or refurbishment of CPS electrical circuit breakers found during the evaluation.

- Performance of a review to verify the technical adequacy of preventive maintenance on risk-significant CPS components.

- Performance of a review to ensure that deficiencies noted during the performance of Maintenance Work Requests have been appropriately entered into CPS corrective action processes.

- Performance of a review to verify that causes of significant equipment problems have been identified, or that all apparent causes have been corrected.

- Initiation of improvements to the CPS Corrective Action Program to improve the identification, investigation, prioritization, and correction of problems at the station.

- Performance of an assessment of the Industry Feedback Process to identify methods to improve the timeliness and effectiveness of industry information reviews at CPS.

- Revision to Nuclear Station Engineering Department Procedure A18, "System Engineering Responsibilities," to better define system engineer responsibilities and training of system engineers on determining root causes of equipment failures.

Attached is a description of our response to the specific violations. The status of our broader action to address generic issues associated with breaker problems at CPS was described in our September 26, 1997, meeting with the NRC Region III and will be submitted in separate correspondence.

The response to this violation also contains the following commitments:

- All General Electric Magne-Blast circuit breakers will be refurbished by January 9, 1998.

- A review of the adequacy of preventive maintenance tasks will be conducted. This evaluation will include a review of preventive maintenance on over forty component types utilized in risk-significant and safety-significant systems at Clinton Power Station. This review includes an assessment of applicable industry information and will be completed prior to plant startup.

- All in-service safety-related ABB 480-volt circuit breakers will be refurbished prior to plant startup.

- All Westinghouse DHP circuit breakers will be reworked or refurbished prior to plant startup.

- By December 15, 1997, Nuclear Station Engineering Procedure A.18 "System Engineer Program" will be revised to redefine system engineer responsibilities.

- By December 15, 1997, appropriate system engineers will receive training on how to determine the root cause of equipment failures.

- A training seminar will be conducted for appropriate maintenance craft personnel by October 15, 1997, with instructions to return work packages that do not specify the material to be used.

- A training seminar will be conducted for Maintenance Planners by November 15, 1997, to reinforce the requirements of identifying materials necessary to perform work in each MWR package.

- By November 30, 1997, a review will be performed to identify other situations in which unapproved lubricants may have been used, causing equipment problems.

- An assessment to identify methods to improve the timeliness and adequacy of the Industry Information Feedback Process will be completed by October 3, 1997.

- The results of the Industry Information Feedback Process assessment will be used to enhance this program by December 15, 1997.

On September 16, 1997 IP received a Demand for Information letter EA-97-435, (Demand for Information Pursuant to 10 CFR 50.54(f) Regarding Corrective Action Program Performance at Clinton Power Station). IP will conduct the necessary evaluations and take the required actions to thoroughly address the concerns identified in that letter. These actions and their results will be discussed with the NRC to ensure understanding and provide the level of confidence required.

Please contact me at (217) 935-8881 extension 3400 if you have any questions regarding this response or the actions being taken to address these violations.

Sincerely,

Wayne D. Romberg
Assistant Vice President

MRS/krk

Attachments

cc: Regional Administrator, Region III
NRC Senior Resident Inspector, V-690
NRC Clinton Licensing Project Manager
Illinois Department of Nuclear Safety
D. Zemel, T-31Z

U-602841

STATE OF ILLINOIS
COUNTY OF DEWITT

Wayne D. Romberg, being first duly sworn, deposes and says: I am the Assistant Vice President of Illinois Power Company. The foregoing Response to Notice of Violation and Proposed Imposition of Civil Penalty (Letter No. U-602841), dated September 29, 1997, and the attached Reply to Notice of Violation (Attachments to Letter No. U-602841), were prepared under my supervision and direction. I know the contents thereof, and to the best of my knowledge and belief the facts contained therein are true and correct.

Wayne D. Romberg

Dated: September 29, 1997

Subscribed and sworn to
before me this 29th day of September, 1997

Notary Public

* OFFICIAL SEAL *
Michael D. Stickney
Notary Public, State of Illinois
My Commission Expires 2/22/99

My Commission Expires:

2/22/99

Response to Notice of Violation

The violation states, in part:

> "10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," requires, in part, that measures be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the conditions is determined and corrective actions are taken to preclude repetition.
>
> A Notice of Violation (Notice) was issued on June 16, 1995, which identified that a significant condition adverse to quality, hardening of grease in ABB K-line breakers, had not been properly identified and corrected.
>
> Contrary to the above, as of March 7, 1997, the licensee failed to assure that the above significant condition adverse to quality was promptly corrected in that further examples of these problems were identified that had not been corrected as a result of actions taken in response to the Notice. Specifically, the licensee failed to adequately correct the hardened/hardening grease on ABB, GE and Westinghouse electrical breakers. The lack of prompt corrective action resulted in binding of various breaker components and the failures of safety-related and critical non-safety related breakers to operate during testing and on demand."

Background and Reason for Violation

The Notice of Violation issued on June 16, 1995, was cited for a failure to take prompt action to implement the requirements of a change to the vendor manual for ABB 480-volt circuit breakers. The vendor manual change was the addition of a recommendation to refurbish the ABB 480-volt circuit breakers every ten years. This recommendation was not properly reviewed when it was received in 1991. In September 1994, a condition report was initiated to identify that the vendor manual update had an inadequate review and recommendations made in that vendor manual update had not been properly evaluated. However, at the time of the 1995 NRC inspection, the condition report had not yet been answered and the review of the vendor manual change had not yet been performed.

In response to the Notice of Violation issued on June 16, 1995, Illinois Power (IP) developed a schedule to refurbish the ABB 480-volt safety-related circuit breakers. The schedule detailed the systematic refurbishment of the ABB 480-volt safety-related circuit breakers over the next three refueling outages. IP personnel believed this schedule was acceptable based on the favorable performance history of low and medium voltage air circuit breakers at Clinton Power Station (CPS). The response to the condition report failed to adequately consider the performance of these circuit breakers elsewhere in the

inc[illegible] Industry information was available that documented problems with low and medium voltage air circuit breakers that had remained in-service for extended periods of time (greater than 10 years) without refurbishment. The response to this Notice of Violation and the review of industry information focused only on ABB 480-volt circuit breakers and did not consider similar problems of age related deg[illegible]tion in other safety-related circuit breakers at CPS.

The reasons for this violation were an inability to identify and respond to significant equipment issues and an ineffective industry experience program.

Corrective Steps Taken and Results Achieved

A comprehensive evaluation of all circuit breakers of other types and manufacturers was performed. This included review of past and current maintenance practices and procedures, as well as applicable industry experience, information, vendor technical information, and expert consultant input. Actions and future improvement recommendations are currently being reviewed for implementation.

A rework of all Westinghouse DHP circuit breakers will be performed. This rework is of sufficient scope to identify and correct problems associated with hardened grease and other industry issues. The refurbishment of all in-service safety related ABB 480-volt circuit breakers, which started in 1995, will be complete prior to startup from the current refueling outage. All in-service Magne-Blast circuit breakers will be refurbished by January 9, 1998.

Corrective Steps to Avoid Further Violations

A review of the adequacy of preventive maintenance tasks will be conducted. This evaluation will include a review of preventive maintenance on over forty component types utilized in risk-significant and safety-significant systems at Clinton Power Station. This review includes an assessment of applicable industry information and will be completed prior to plant startup.

Improvements have been made to the Material Condition Management Team (MCMT). The MCMT is composed of Operations, Maintenance, and Engineering management. The team is responsible for the long term material condition of the plant. Corrective actions have been taken to improve the management of the Long Standing Material Problem List maintained by the MCMT. Improvements to its administration include: soliciting input from various site department leaders, assignment of an owner for each long standing material problem, and a periodic review and update of the list by the MCMT. Each long standing material problem owner is responsible for developing a schedule and periodically providing status to the MCMT. Also, senior station management (Vice President, Plant Manager, and Engineering Manager) are meeting at least quarterly to discuss the Long-standing Material Problem List, Material Condition Management Program Quarterly Trend Report, and presentations that have been made to the MCMT. These actions are

expected to strengthen the identification and resolution of material condition problems related at Clinton Power Station.

In order to better describe the system engineer's role, including responsibility for evaluation of industry information, Nuclear Station Engineering Procedure A.18 "System Engineer Program" is being revised to redefine system engineer responsibilities. This will be complete by December 15, 1997. Also, appropriate system engineers will receive training on how to determine the root cause of equipment failures. This should lead to better identification of generic equipment problems. This training will be complete by December 15, 1997.

An assessment of the Industry Information Feedback Process is in progress. The goal of this assessment is to identify methods to improve the timeliness and adequacy of industry information reviews at Clinton Power Station. This assessment will be complete by October 3, 1997. The results of the Industry Information Feedback Process assessment will be used to enhance this program by December 15, 1997.

Date When Full Compliance Will Be Achieved

Illinois Power will be in compliance with 10CFR50 Appendix B, Criterion XVI, "Corrective Actions" in regard to this issue at the completion of the rework of circuit breakers described in this response. This is scheduled for completion on January 9, 1998.

Response to Notice of Violation

The violation states in part:

> "10 CFR 50, Appendix B, Criterion VIII, "Identification and Control of Materials, Parts, and Components", requires, that measures shall be established for the identification and control of materials, parts, and components, including partially fabricated assemblies. These measures shall assure that identification of the item is maintained by heat number, part number, serial number, or other appropriate means, either on the item or on records traceable to the item, as required throughout fabrication, erection, installation, and use of the item. These identification and control measures shall be designed to prevent the use of incorrect or defective material, parts, and components.
>
> Contrary to the above, as of March 7, 1997, adequate measures were not established to prevent the use of incorrect lubricants or cleaning agents to clean or lubricate safety related electrical breaker components in an approved manner. Specifically, an unapproved lubricant ("Never Seize") was utilized on breaker 2B for RR pump 1A and other breakers, and an unapproved cleaning agent, Freon, was utilized as a degreaser on breaker 5B for RR pump 1B and other breakers in an uncontrolled manner. In addition, an approved lubricant (Mobil 28 grease) was used in an incorrect, unauthorized fashion on numerous breakers."

Background and Reason for Violation

Each of the three specifically identified occurrences of the use of unapproved lubricants or cleaners identified in the above violation were investigated. The improper use of Never Seize on the trip latch mechanism of the Reactor Recirculation circuit breaker most likely occurred during the performance of Maintenance Work Request (MWR) C18473 which was worked during October 1986. The MWR did not identify the use of Never Seize but did direct the performance of lubrication of the trip latch mechanism. No other occurrences of lubrication of the trip latch mechanism of this circuit breaker were identified during the review of previous MWRs. The improper use of Freon TF to clean a Reactor Recirculation system circuit breaker was investigated. Freon TF was used inappropriately to clean the trip latch in December 1989. Freon TF was approved for use on electrical connections but not for mechanical components. The circuit breaker was reworked by MWR D52388 in 1993 to correct trip latch binding.

Two General Electric circuit breakers were identified as having Mobile 28 applied to the auxiliary contacts. The concern with the use of this lubricant is mixing it with the previously used lubricant for General Electric circuit breakers. Studies on the compatibility of Mobile 28 with the previously specified lubricant reveal that it does not create a problem in the short term if ratios of at least 80/20 of the new vs. old lubricant, are maintained. The maintenance performed when Mobile 28 was used required that the old grease be wiped off when the new grease was applied. Therefore, it is expected that

the ratio of new vs. old grease was at least 80/20. Mobil 28 was inappropriately applied to these two circuit breakers in October 1995 and November 1995. This evaluation, in conjunction with an extensive inspection and testing procedure performed on each General Electric Magne Blast circuit breaker, indicates that the circuit breaker condition is sufficient to prevent a problem until the circuit breakers are refurbished which is scheduled for completion in January 1998.

During the investigation on the use of improper lubricants and cleaners, the procedures in place to prevent their misapplication were reviewed. Clinton Power Station (CPS) procedure 1019.00 "Control Of Chemicals" is the plant procedure that provides instruction for the control of chemicals which includes lubricants and cleaners.

CPS procedure 1019.00 lists responsibilities of different groups for the control of chemicals. Maintenance planning personnel are given the responsibility for ensuring the intended end-use of any chemical is authorized by an approved engineering document and that the chemical is approved for use in that application. Discussions with maintenance planning personnel uncovered that they were generally unaware of this requirement in CPS procedures. CPS procedure 1019.00 lists the responsibilities of supervisory personnel (e.g., Managers, Directors and Group Leaders) for using chemicals as ensuring the intended end-use of a chemical is authorized and that all limitations of use are adhered to by the personnel using the chemical. The CPS procedure describes that all site personnel are responsible for adherence to the limitations associated with the use of the chemical. Discussions with these plant personnel determined that they were not knowledgeable of these procedural responsibilities or sensitive to the problems associated with equipment failures due to misapplication of chemicals.

Review of the circuit breaker maintenance procedures showed that in many cases a generic description such as "light machine oil" was given for a lubricant instead of the name of a specific product that could be used on the circuit breaker. Had a specific material been specified in the maintenance procedure it is likely that the correct material would have been used.

The reason for this violation was a lack of knowledge of the program requirements for the control of lubricants and cleaners used during maintenance work.

Corrective Steps Taken and Results Achieved

Each of the circuit breakers identified in this Notice of Violation have been reworked or are scheduled for rework to prevent the effect of the unauthorized lubricant or cleaner from affecting the proper operation of the circuit breaker. The circuit breaker where Never Seize was misapplied was corrected under MWR D61002. The use of Freon TF was corrected when the trip latch was reworked by MWR D52388. One of the two circuit breakers where Mobile 28 was applied has been refurbished. The other circuit breaker will be refurbished by January 9, 1998.

Corrective Steps to Avoid Further Violations

A training seminar was presented to maintenance technicians that worked on circuit breakers in May and June 1997 which stressed the need to contact supervision if it was not clear what lubricant to use. A training seminar will be given to appropriate maintenance craft personnel to return work packages that do not specify the material that is to be used. This will be complete by October 15, 1997. A training seminar will be conducted with Maintenance Planners to reinforce the requirements to identify materials necessary to perform work in each MWR package. This will be done by November 15, 1997.

A review will be performed to identify other situations in which unapproved lubricants and cleaners may have been used causing equipment problems. This review consists of: a review of the condition report database from January 1, 1992, to September 15, 1997, to identify failures of equipment due to misapplication of materials, and a review of maintenance rule items for failures due to misapplication of materials. This review is scheduled for completion by November 30, 1997.

Date When Full Compliance Will Be Achieved

Illinois Power will be in compliance with 10 CFR 50, Appendix B, Criterion VIII, "Identification and Control of Materials, Parts, and Components", as it relates to this violation at the completion of the training seminar for appropriate maintenance craft personnel on returning work packages that do not specify the material that is to be used. This is scheduled for completion on October 15, 1997.