

FEB 28 1989

Docket No. 50-255
License No. DPR-20
EA 88-140

Consumers Power Company
ATTN: David P. Hoffman
Vice President
Nuclear Operations
1945 West Parnall Road
Jackson, MI 49201

Gentlemen:

Thank you for your letter dated January 20, 1989, informing us of the steps you have taken to correct the items of noncompliance which we brought to your attention in our letter dated December 22, 1988.

With regard to Violations I and II.A., our position on the significance of the specified conditions that could have adversely affected the safety of the plant remains as described in our December 22, 1988 letter. Based on the actions you took as a result of our May 1988 inspection and subsequent discussions, it was determined that you now have taken appropriate actions to correct the identified examples of the violations and to prevent recurrence. Therefore, we have no further questions regarding these matters at this time.

With regard to Violation II.B., we do acknowledge that you had adequately informed us regarding the installation of the emergency lighting units and also that your compensatory actions of carrying portable lights was an appropriate interim measure. However, we have considered all of the information related to this issue and have concluded that the violation is appropriate in that following the 1986 NRC inspection, an adequate re-assessment of the emergency lighting system still had not been completed until after the NRC raised additional lighting system concerns during the May/June 1988 inspection. Specifically, you had incorrectly taken credit in your re-assessment for having the plant D. C. lighting system in place for Appendix R emergency lighting purposes. The identified discrepancies encountered during our 1988 emergency lighting review resulted from a lack of communication between operations personnel performing the lighting system walkdowns and guidance provided by appropriate technical staff. This was a contributing factor to our determination that an overall lack of management involvement in the implementation of your corrective action program had occurred. As discussed in your January 20, 1989 response, full compliance with this issue has been achieved. Therefore, no further reply to this violation is required and we have no further questions regarding this matter at this time.

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Should you have any further questions regarding this matter, we will be glad to discuss them with you.

Sincerely,

Carl J. Paperiello
for A. Bert Davis
Regional Administrator

cc: Mr. Kenneth W. Berry, Director
Nuclear Licensing
Gerald B. Slade, General Manager

cc w/ltr dtd 1/20/89:
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David P Hoffman
Vice President
Nuclear Operations

January 20, 1989

Nuclear Regulatory Commission
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DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
REPLY TO NOTICE OF VIOLATION REGARDING 10CFR50 APPENDIX R COMPLIANCE

By letter dated December 22, 1988 the NRC transmitted a Notice of Violation and Proposed Imposition of Civil Penalty regarding 10CFR50 Appendix R compliance at the Palisades Plant. In accordance with 10CFR2.201, a Reply to a Notice of Violation is provided herein.

I. NRC Description Of Violation

10CFR Part 50, Appendix B, Criterion XVI, as implemented by Consumers Power Company Quality Assurance Program for Operational Nuclear Power Plants, Section 16, requires in part, that conditions adverse to quality are promptly identified and corrected.

10CFR50.48(c)(3) and (4) require those fire protection features that require prior NRC approval shall be implemented by the end of the first refueling outage commencing 180 days after NRC approval. By letter dated May 26, 1983, the 180 day time period was commenced when the NRC approved the licensee's proposed features assuring compliance with Section III of Appendix R to 10CFR Part 50. These features were to be completed by March 3, 1986.

10CFR Part 50, Appendix R, Section III.L.7 requires that the safe shutdown equipment and systems for each fire area shall be known to be isolated from associated non-safety circuits in the fire area so that hot shorts, open circuits, or shorts to ground in the associated circuits will not prevent operation of the safe shutdown equipment.

Contrary to the above, an adverse condition identified during the July 28 through September 30, 1986 NRC inspection had not been corrected as of the NRC inspection of May 9 through 13, 1988. The adverse condition related to the failure to isolate safety-related equipment from associated non-safety circuits as required by 10CFR50, Appendix R, Section III.L.7. Specifically, two control power cables to the VCT outlet valve (MO-2087) were identified by the 1988 NRC inspection that could hot short with

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associated non-safety circuits and cause spurious opening and compromise or prevent safe shutdown by causing a loss of charging pump and subsequent loss of makeup capability. No other redundant, alternative or dedicated shutdown capability was provided. This adverse condition was identified by the 1986 inspection which determined that the licensee had failed to do a spurious signal analysis on MO-2087 to ensure that spurious operation would not cause a loss of charging flow.

This is a Severity Level III violation.

Civil Penalty - \$75,000.

Reply

Consumers Power acknowledges the lack of a spurious signal analysis for MO-2087 and concedes the Notice of Violation. However, Consumers Power maintains that no condition adverse to safety was presented.

Reason For The Violation

IE Inspection Report 86022 dated November 14, 1986 identified Volume Control Tank (VCT) outlet valve MO-2087 as equipment necessary under 10CFR50 Appendix R and that spurious operation of this valve could lead to a loss of charging flow. This conclusion was predicated on; 1) the Plant's charging pumps being aligned for gravity feeding boric acid to the primary coolant system via the boric acid storage tank, 2) a spurious signal opening MO-2087 concurrent with; 3) a high VCT overpressure. The result of this combination was hypothesized as charging pump failure due to gas binding. At this time the NRC requested that Consumers Power provide a spurious signal analysis for MO-2087.

In October 1987 a second Palisades associated circuit analysis was initiated to confirm previous conclusions that equipment associated with plant shutdown under 10CFR50 Appendix R was adequately protected. When this effort was initiated, VCT outlet valve MO-2087 was included for analysis, however, it was subsequently deleted from the analysis scope. This decision was based on the fact that if MO-2087 was to spuriously open, plant operators through their experience and training would identify the problem, manually close the valve and de-energize its power supply to prevent further opening. At that time, Plant Off-Normal Procedure (ONP) 25.1 recognized that manual operator action may be required, but did not direct operators to de-energize the valve. No communication was pursued with the NRC at that time.

This position was reviewed by the NRC under IE Inspection 88012 which was initiated May 9, 1988. During this inspection, the NRC determined that manual closure of MO-2087 alone would not preclude the valve from spuriously reopening unless it was de-energized. The NRC further identified that unless specifically directed by procedure, plant operators would not necessarily de-energize the valve. Therefore, no positive

assurance that MO-2087 would be protected from spurious signals was evident. Prior to the conclusion of IE Inspection 88012, ONP 25.1 was changed to direct operators to open circuit breaker 52-161 prior to manual closure of MO-2087. This action provides additional assurance that the VCT outlet valve would be in the required position and not subject to reopening via a fire-induced spurious signal. This action was deemed acceptable by the NRC in IE Inspection Report 88012 by acknowledging that "the inspectors determined that the licensee's change to procedure ONP 25.1 will isolate spurious signals that could cause spurious opening of valve MO-2087".

The failure to adequately assure that MO-2087 would not reopen following a fire induced spurious signal has been attributed to a weakness of programmatic management attention at the time of the NRC inspections. Adequate management attention to the NRC open item (86022-03) would have resulted in communication, prior to the followup inspection in 1988 of Consumers Power's belief that no analysis was necessary due to operator experience and training.

Corrective Action Taken and Results Achieved

As presented above, procedural changes deemed satisfactory by the NRC were made to ONP 25.1 prior to the June 30, 1988 completion of IE Inspection 88012. To assure dedicated followup and resolution of all issues associated with 10CFR50 Appendix R, a plant engineer has been assigned the specific responsibility for assuring compliance with Appendix R.

Corrective Actions To Be Taken To Avoid Further Non-Compliance

To further enhance management involvement and regulatory compliance, a Technical Advisory Group is being formed under direction of the plant engineer assigned Appendix R responsibilities. This multi-disciplinary group will act as an oversight review group to re-review technical issues and provide direction to assure Palisades' continuing compliance with 10CFR50 Appendix R. The activities of this Technical Advisory group will be presented to plant management on at least a quarterly basis.

Documentation of Palisades' continuing compliance to Appendix R will be provided within a Palisades Plant Fire Protection Program Report. This report will be developed by compiling existing documentation and incorporating any future efforts into a single document that provides information and appropriate references to Palisades' compliance to Appendix R. This report will be incorporated into the in-place design control programs.

Date When Full Compliance Will Be Achieved

As recognized by IE Inspection 88012, compliance with 10CFR50 Appendix R regarding VCT outlet valve MO-2087 was achieved when ONP 25.1 was changed.

The formation of the Technical Advisory Group is in progress and will be formalized by March 1, 1989 with quarterly management updates beginning simultaneously. The above described Plant Fire Protection Project Program Report will be available by June 1, 1989.

II. A. NRC Description Of Violation

10CFR Part 50, Appendix R, Section III.L.7, requires that the safe shutdown equipment and systems for each fire area shall be known to be isolated from associated non-safety circuits in the fire area so that hot shorts, open circuits, or shorts to ground in the associated circuits will not prevent operation of the safe shutdown equipment.

Contrary to the above, during the July 28 through September 30, 1986 inspection, the safe shutdown equipment and systems for each fire area were not known to be isolated from associated non-safety circuits in the fire area so that hot shorts, open circuits, or shorts to ground in the associated circuits would not prevent operation of the safe shutdown equipment. Specifically:

1. A fuse and circuit breaker coordination analysis was inadequate in that the protection provided for fire induced associated circuit common bus failures could not be demonstrated due to the lack of time current curves. This inadequacy demonstrated a failure to adequately show that this type of associated circuit could not have prevented operation of required safe shutdown equipment.
2. The licensee had not analyzed the letdown interface for spurious operations that could cause a fire-induced LOCA via the letdown high/low pressure interface. Since the licensee had not performed a letdown high/low pressure interface spurious signal analysis, the licensee's protection for a fire-induced LOCA via the letdown high/low pressure interface could not be demonstrated. The NRC also identified that as of May 13, 1988, two cables routed together were susceptible to the same fire that could have caused the simultaneous spurious opening of the letdown orifice valves.

These two examples are considered as a Severity Level IV violation.

Reply

Consumers Power recognizes the facts presented above to be accurate and concedes the violation. However, Consumers Power Company maintains that no condition adverse to safety was presented.

Reason For The Violation

1. IE Inspection Report 86022 identified that the Palisades Plant breaker coordination study, as required by 10CFR50 Appendix R Sections III.G

and L. was incomplete in that time current curves were not available for the inspectors review. As part of the effort undertaken to assure compliance with Appendix R prior to the 1986 NRC inspection, Consumers Power determined that a complete bus coordination study would not be required. This determination was based on:

- a. The assumption that necessary studies were completed during original plant construction,
 - b. necessary time current curves were assumed to be retained with original plant construction records, and
 - c. all bus coordination studies completed as a result of plant modifications had demonstrated the first two assumptions to be correct.
2. During the 1986 NRC inspection, the inspectors identified that Consumers Power had not identified or evaluated the letdown portion of the Chemical and Volume Control System and its associated equipment as a high/low pressure interface. The evaluation was not completed at the time of the 1986 inspection as Consumers Power did not consider this system to be a high/low pressure interface requiring an analysis. Decisions made as to what systems would constitute high/low pressure interfaces were based on information available and engineering judgement. It was not until Generic Letter 86-10 was issued in April 1986 that clarification of the spurious signal criteria for high/low pressure system interfaces requiring analysis under Appendix R was provided. However, guidance which defines a high/low pressure interface, thus minimizing the potential for mis-interpretation occurring in the industry and at Palisades (eg, pressurizer relief path), has not been provided.

Corrective Actions Taken and Results Achieved

1. By letter dated October 14, 1986 Consumers Power committed to perform a complete circuit breaker coordination analysis by December 1, 1987. During IE Inspection 88012 the inspectors reviewed the completed analysis and "determined that breaker coordination was now satisfactory".
2. After the 1986 inspection, analyses performed regarding the Palisades letdown high/low pressure interface concluded that although a spurious signal could occur, a simultaneous opening of CV-2001 and one of the associated letdown orifice isolation valves, CV-2003, CV-2004 or CV-2005 would be required to bridge the high and low pressure systems. In this scenario, the potential for primary coolant inventory imbalance is mitigated by the operation of one charging pump.

During the 1988 inspection, the NRC acknowledged the potential for a spurious signal as pointed out by Consumers Power, however, the inspectors noted that fire-induced spurious signals could result in

spurious operation of CV-2001 simultaneously with the spurious opening of all three letdown orifice valves CV-2003, CV-2004 and CV-2005. The inspectors further noted that the two cables providing power to the four valves were routed in a common enclosure and hence were susceptible to additional fire induced spurious signals.

As an interim protection measure against the potential failures, compensatory fire watch patrols were implemented in areas susceptible to fire damage. Full resolution of this matter was achieved when Off-Normal Procedure (ONP) 25.2 was revised to instruct operators to remove power to the letdown orifice valves, thereby assuring the orifice valves would close and remain in the closed position until power was restored.

Corrective Actions To Be Taken To Avoid Further Non-Compliance

As the failure to assure compliance with Appendix R for the issues noted above centered around rule mis-interpretations and documentation inadequacies, the formation of the Technical Advisory Group and the resulting management updates discussed previously are also applicable. These efforts will focus on technical resolution of issues relating to Appendix R and provide a forum to communicate potential mis-interpretations to both Consumers Power management and the NRC.

Date When Full Compliance Will Be Achieved

Full compliance was achieved for the two specific items as indicated below:

The breaker coordination study was completed on September 29, 1987 and ONP 25.2 was revised on May 19, 1988.

The schedule for implementation of the corrective actions associated with the Technical Advisory Group is as specified above for Notice of Violation I.

II. B. NRC Description Of Violation

10CFR Part 50, Appendix B, Criterion XVI, as implemented by Consumers Power Quality Assurance Program for Operational Nuclear Power Plants, Section 16, requires in part, that conditions adverse to quality, such as deficiencies of equipment are corrected as soon as practical. It further requires that the controls assuring corrective action are implemented in a timely manner.

Contrary to the above, following an NRC identification of eight hour emergency lighting system deficiencies in July 1986, during a corrective action review in September 1986 the licensee identified that additional deficiencies existed with the lighting system. By letter dated December 12, 1986 they committed to correct these lighting system deficiencies by approximately November 13, 1987. However, while some corrective actions were taken, deficiencies still existed on June 30, 1988.

This is a Severity Level IV violation.

Reply

Consumers Power acknowledges the facts presented as correct and concludes that the Notice of Violation is not warranted. In addition, Consumers Power maintains that no condition adverse to safety was presented and that adequate compensatory action was provided.

Reason For The Violation

IE Inspection Report 86022 identified that emergency lighting, as required by 10CFR50 Appendix R, Section III.J was not available in the following areas:

- a. Volume Control Tank (VCT) Room,
- b. Boric Acid Storage Tank (BAST) Room,
- c. 590' level by air ejector (in pit) near makeup valve, and
- d. Containment 607' level near CV-2001

By letter dated October 14, 1986, Consumers Power committed to install emergency lighting units (ELUs) in the VCT Room, BAST Room and 590' level prior to startup from the Fall 1986 Maintenance Outage. Consumers Power, further committed to require operators to carry portable lights as a compensatory measure until lighting which could withstand containment environments could be identified. By letter dated December 12, 1986, Consumers Power informed the NRC that ELUs had been installed for three of the areas identified in the October 14, 1986 letter. This letter also informed the NRC the technical concerns regarding installation of an ELU at CV-2001 had not been resolved, and that access/egress routes to other required equipment would be re-evaluated for additional ELU installation. The actions were scheduled for completion prior to startup from the 1987 Maintenance Outage.

On October 6, 1987 Consumers Power informed the NRC of plans to defer the outstanding commitments identified in our letter of December 12, 1986 until startup from the Spring 1988 Maintenance Outage. Compensatory measures previously identified would remain in effect. By letter dated February 10, 1988 the NRC was updated as to continuing difficulties being experienced in finding qualified eight hour battery powered lights which could withstand the anticipated environmental conditions at CV-2001. This letter further identified that the anticipated Spring 1988 Outage would not take place and that resolution of lighting at CV-2001 would take place during the upcoming 1988 Refueling Outage. The commitment to carry portable lighting as a compensatory measure was again reconfirmed. By letter dated December 1, 1988 the NRC was informed that further associated circuits analyses had been performed which disclosed that manual operation of CV-2001 was not required, hence an ELU was not required.

As indicated within the chronological correspondence listed, Consumers Power notified and continually updated the NRC regarding resolution of the ELU issue. The compensatory action of carrying portable lights was documented and perceived as an appropriate interim measure. Since no communications were received from the NRC regarding the timeliness of actions and that safety concerns were eliminated by the compensatory measures, Consumers Power believed resource allocation to resolve this matter was appropriate.

Corrective Actions Taken and Results Achieved

As stated in Consumers Power's letter to the NRC of December 12, 1986, ELUs have been installed in the VCT Room, BAST Room and on the 590' level in the Turbine Building near the air ejector. Therefore, compliance with Section III.J of Appendix R has been achieved. As stated in Consumers Power's December 1, 1988 submittal, an ELU at CV-2001 is no longer necessary. The need for an ELU at CV-2001 was eliminated when additional analysis determined that manual closing of CV-2001 is not necessary to meet the applicable guidelines of Generic Letter 86-10. Thus, compliance with Section III.J has also been achieved for CV-2001. In addition, Consumers Power completed an additional ELU walkdown which recommended a number of additional ELUs as being desirable. These additional ELUs were installed during the 1988 Refueling Outage.

Corrective Actions To Be Taken To Avoid Further Non-Compliance

The formation of the Technical Advisory Group for Appendix R issues and the planned quarterly management updates will provide a forum for resolution of technical issues, provide a vehicle to obtain continuing management involvement and effective communication with the NRC.

Date When Full Compliance Will Be Achieved

Full compliance has been achieved for the issues identified within this violation. Completion of actions associated with the Technical Advisory Group will be achieved under the schedule defined within Notice of Violation I.

David P Hoffman (Signed)

David P Hoffman
Vice President
Nuclear Operations

CC Administrator, Region III, NRC
NRC Resident Inspector - Palisades Plant

CONSUMERS POWER COMPANY
Palisades Plant
Docket 50-255 - License DPR-20

RESPONSE TO NOTICE OF VIOLATION AND PROPOSED
IMPOSITION OF CIVIL PENALTIES DATED DECEMBER 22, 1988

At the request of the Commission and pursuant to the Atomic Energy Act of 1954 and the Energy Reorganization Act of 1974, as amended, and the Commission's Rule and Regulations thereunder, Consumers Power Company submits our response to Notice of Violation and Proposed Imposition of Civil Penalties dated December 22, 1988. Consumers Power Company's response is dated January 20, 1989.

CONSUMERS POWER COMPANY

By David P Hoffman (Signed)
David P Hoffman, Vice President
Nuclear Operations

Sworn and subscribed to before me this 20th day of January 1989.

Elaine E Buehrer (Signed)
Elaine E Buehrer, Notary Public
Jackson County, Michigan
My commission expires October 31, 1989

[SEAL]