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**Detroit  
Edison**

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DCS

August 1, 1986  
VP-86-0107

Mr. James M. Taylor, Director  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Mr. Taylor:

Reference: Fermi 2  
NRC Docket No. 50-341  
Facility Operating License No. NPF-43

Subject: Detroit Edison Response to  
Notices of Violation and Proposed  
Imposition of Civil Penalties

This letter addresses the two Notices of Violation and Proposed Imposition of Civil Penalties that resulted from NRC Inspection Report No. 50-341/85040 (DRP).

EA 86-112, July 29, 1986

On July 29, 1986, the NRC Regional Administrator - Region III transmitted to the Detroit Edison Company an enforcement package describing three items that involve violations of the Fermi 2 Technical Specifications and of the Facility Operating License.

Recognizing the extensive actions the Company has taken to correct the identified problems, NRC reduced the base civil penalty by 50 percent and stated that no response is required to the Notice of Violation except for payment of the Proposed Imposition of Civil Penalty of \$75,000.

Detroit Edison agrees with the NRC assessment that extensive corrective actions have been taken. The Company, therefore, is paying the proposed civil penalty without responding further to the violations cited in the July 29, 1986 notice. Enclosed is the Company's check for \$75,000.

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EA 86-61, July 3, 1986

On July 3, 1986, you transmitted to the Detroit Edison Company an enforcement package relating to the control rod pull error event which occurred at the Company's Fermi 2 plant on the evening of July 1-2, 1985. Included in the enforcement package was an immediately effective order modifying the Fermi 2 license, a Notice of Violation and a Proposed Imposition of Civil Penalties.

The immediately effective order directed the Company to submit a control room audit program to Mr. Keppler, the Regional Administrator, and specified that a plant operator not be returned to licensed activities without prior notice to the Regional Administrator. On July 16, 1986, the Company submitted the required control room audit program. On July 30, 1986, we received Mr. Keppler's letter approving the audit program.

The Notice of Violation identified three Severity Level III problems, relating to: (a) the operator error in pulling control rods not as specified by the rod pull sheet and improperly verifying that the control rods were positioned as specified in the rod pull sheet; (b) a breakdown in control room supervision and management during the rod pull evolution; and (c) a failure to properly evaluate the rod pull error, including the identification of root causes, before resuming startup activities. Pursuant to 10 CFR 2.201, the Company's written response to this Notice of Violation, identified as Attachment A, is enclosed.

The Proposed Imposition of Civil Penalties recommended that the Company be fined \$100,000 for each of the three violations. Enclosed is the Company's check in full payment of the \$300,000 proposed penalty. The Company recognizes the significance of the event, acknowledges that personnel and management errors were made, and is committed to implementing comprehensive corrective action to minimize the likelihood that personnel or management errors cause future plant problems. In recognition of these factors, the Company is paying the proposed civil penalty without protest.

Although we wish to put the civil penalty behind us so that we may concentrate on corrective actions and high levels of personnel performance during future plant operations, we are not in agreement with all of the factual statements, legal conclusions and policy views contained in the enforcement package. Our response to the Notice of Violation highlights some of the concerns we have about the enforcement package, as they relate to the specific identified violations. Listed below are some additional comments.

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The Company strenuously objects to and contests the claim that Company management exhibited a "lack of forthrightness" in communicating facts about the rod pull incident to the NRC. The improper rod pulls occurred between eleven p.m. and midnight on July 1. Promptly following the event, the Nuclear Shift Supervisor ("NSS") initiated a Deviation Event Report ("DER") describing the event and stating his conclusion that the reactor had not gone critical. The Company's Corrective Action Review Board ("CARB") met the next morning (July 2), reviewed the incident, and concurred with the NSS that the event was not reportable under 10 CFR 50.72 or 50.73. However, further review was directed to determine if the reactor had gone critical. On July 3 the NRC's resident inspector was informed of the event, told that it was presently believed that the reactor had not gone critical, but was also informed that Reactor Engineering was performing a technical review because of some uncertainty about whether criticality had occurred.

On July 4 a Shift Reactor Engineer (not the one on shift during the rod pull event) concluded that the reactor had gone critical. His conclusion was reviewed at a meeting on July 5 and a determination was then made that the reactor had in fact gone critical with a 114 second period. This fact was not communicated to the NRC senior resident inspector until July 15. On reflection, it is apparent that the Company should have followed up its initial contact with the resident inspector better, and should have notified him and Region III management of the criticality sooner.

The failure to do this was a management oversight that we believe will not recur based on the corrective actions implemented by the Company. There was, however, no lack of candor or forthrightness on the part of the Company or its management. The incident was promptly reported, as was the fact that the Company was performing a detailed technical review to determine if the plant had gone critical. We should have done better in communicating with the NRC, but there simply was no attempt or desire to withhold information.

Your letter particularly chastises the Company for not "correcting the impression left by the staff at the July 10, 1985 Commission meeting that DECo was an outstanding performer in the area of control room operations." I believe your view of Company management to be unduly harsh and unwarranted. While there was some delay in notifying the NRC Staff about whether the plant had gone critical, there was no delay in notifying them about the personnel error, which in terms of reporting events quickly was the more significant of the two.

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You should be reassured that the Company is committed to openness, candor and forthrightness in all of its dealings with the NRC. The rod pull event has further sensitized Company personnel and management to the need to communicate any potentially significant event to the NRC.

Included throughout parts of the enforcement package is the implication that the Company was late in recognizing the significance of the event and late in initiating an investigation into the causes of the event. This is simply not supported by facts. On the evening of July 1-2, immediately following the improper rod pull, our NSS initiated a Deviation Event Report ("DER") on the incident. By its nature a DER requires that an investigation be made. It was the review of the DER the next morning by CARB that led to the further technical review to determine if criticality had occurred. In addition, on July 6 the advisor to the plant manager was requested to perform his own independent assessment of the event, determine root causes and recommend necessary corrective action.

There is little doubt that the initial uncertainty over whether the plant had gone critical, and the need to determine whether the event was reportable, focused the Company's attention on the technical aspects of the event. I would add that the NRC Staff also had an early preoccupation with the technical issues, especially because reporting of the criticality determination had been delayed. Nevertheless, the Company's evaluations always included a full analysis of root causes and recommended corrective actions that went well beyond the technical issues.

After this flurry of early activity, and as further problems came to light, the Company took even broader and more comprehensive actions to investigate, understand, and respond to the management issues being identified at Fermi 2. These further reviews led to the Reactor Operations Improvement Plan, the Nuclear Operations Improvement Plan, and the Independent Overview Committee, among others. The Company has discussed the results of these initiatives with the NRC Staff on numerous occasions.

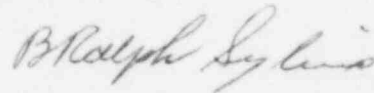
The Company accepts responsibility for errors made by its operators. The Company also recognizes the significance of those errors and the potential adverse impacts that can arise from human error. Nonetheless, we do not believe imposing the maximum fine for a human error that did not endanger public health and safety represents either good policy or a reasonable administration of the NRC's regulatory program.

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As we have told the Commissioners, the Company deeply regrets the incident and believes performance at Fermi 2 was not at the high standards which we set for ourselves. The Company is anxious to demonstrate to the NRC and to the public that it can operate Fermi 2 in a safe and efficient manner and as a good neighbor. Upon restart of the plant we intend to ensure that our performance objectives are met.

If you have any questions regarding this report, please contact Mr. Joseph E. Conen at (313) 586-5083.

Sincerely,



Attachment

cc: M. D. Lynch  
W. G. Rogers  
G. C. Wright  
USNRC Document Control Desk  
Washington, D. C. 20555

Attachment A

RESPONSE TO NOTICE OF VIOLATION AND  
PROPOSED IMPOSITION OF CIVIL PENALTIES EA 86-61

Pursuant to the provisions of 10 CFR 2.201, set forth below is the required response of The Detroit Edison Company to the above captioned action. The Company has chosen not to restate the matters set forth in the above notice but rather incorporates them by reference here and all references to paragraphs are as identified in that document.

Paragraph I(A) and (B) - The Company admits that on July 1, 1985, the Nuclear Supervising Operator at the control panel pulled 11 control rods from the full-in position (00) to the full-out position (48) rather than in notch control to the 04 position, as required by the rod pull sheet, and further admits that on July 1, 1985, the NSO at the control panel improperly verified and documented by initialing the pull sheet that the 11 rods were at position 04 when they were actually at position 48.

As a result of the reviews and investigations which the Company conducted following the incident, the following have been determined to be the reasons for these violations and the specific corrective actions taken.

The NSO at the controls made a mistake in reading the rod pull sheet when he pulled eleven Group 3 control rods from position (00) to (48) instead of to (04). Not recognizing the error, he initialed the rod pull sheet for each rod pulled. Factors that contributed to his errors were:

1. Previous to the rod pull error and in addition to observing the off-going shift NSO pull rods to position (48), the NSO correctly pulled eight rods to position (48), which established a pattern for pulling rods to this position.
2. Although the change in pull position, (04) for Group 3 rods versus (48) for Group 1 and 2 rods, occurred on a new page of the rod pull sheets, the change was not obvious because the appearance of the page was the same. Also, blank spaces were provided for the NSO to enter his initials under the column "Rod Fully Withdrawn" of the Group 3 rod pull sheets, although none of the rods in Group 3 listed on the sheet were to be fully withdrawn.
3. Operators trained at the Fermi 2 simulator used rod pull sheets that withdrew Group 3 rods to position (48) in one step, as had been industry practice, instead of the newer process of the reduced notch worth sequence that moved the rods in numerous intermediate steps.

## Attachment A

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Upon noticing his error, the NSO immediately began inserting the improperly withdrawn rods, and then requested the Shift Technical Advisor in Training (STAIT) to notify the Nuclear Shift Supervisor (NSS). When the NSS arrived at the control panel, he observed the NSO inserting rods.

For subsequent plant startups a second qualified operator was required to verify final rod position for Group 3 and 4 rod pulls. This action was taken until some reduced notch worth control restraint was added to the Rod Worth Minimizer. Reactor Engineering also modified Group 3 and 4 rod pull sheets by entering an N/A in the "Rods Fully Withdrawn" column if rods were not to be fully withdrawn. Rod pull sheets used at the Fermi 2 simulator for operator training were made consistent with those used in the plant.

The Company has taken the the following corrective actions to avoid further noncompliance with the result that it is presently in full compliance on the matter.

Rod pull sheets were modified to remove blank columns that indicated "Rod Position 48" and Rod Coupling Verified" to eliminate confusion concerning a rod's required final position. The modified rod pull sheets were added to an existing system operating procedure SOP 23.623, which is now the controlling procedure for rod pulling activities. Procedure 51.000.08, which previously contained the rod pull sheets, was cancelled.

A Rod Pull Cover Sheet was developed and also included in the SOP. The cover sheet provides information and instruction regarding the rod pull activity. Operators are required to read and initial the cover sheet each time they perform the procedure.

Operators were provided supplemental training on control rod manipulations, using the modified rod pull sheets and modified Rod Worth Minimizer program. The RWM was modified to provide partial enforcement of reduced notch worth control for Groups 3 and 4, which will provide additional assurance of proper rod pulls.

Operators were also directed to pull rods only as trained.

Attachment A

RESPONSE TO NOTICE OF VIOLATION AND  
PROPOSED IMPOSITION OF CIVIL PENALTIES EA 86-61

Paragraph II(A) - Detroit Edison admits that on July 1, 1985, while a reactor operator was pulling control rods the NSS, NASS, the NSO in charge of the control room (CRNSO), and SOA did not adequately supervise the pulling of control rods in that there was a failure to verify that the rods had been properly positioned and some rods were actually mispositioned.

As set forth with more particularity below the Company does not agree with the inference contained in the phrase "failed to properly respond to five short period alarms" that the operator ignored or took no action with respect to those alarms.

The Company's investigations disclosed that the reasons for the violation were that:

During the time the rod pull error occurred, both the NSS and NASS were in the NSS's office conducting shift turnover duties. The NSS's office is located approximately forty feet from the control panel where the NSO was pulling control rods. The NSS and NASS were cognizant of the rod pull activity for plant startup and the activity was authorized by the NSS.

The NSO in charge of the control room and the SOA were in the "at controls" area of the control room. However, as a result of their involvement in other activities related to plant startup and shift turnover, neither was fully attentive to the rod pull evolution. Neither the NSS, NASS, CRNSO, nor SOA are required to verify the position of control rods during rod pulling.

The first ten rods pulled out of sequence were peripheral rods. The eleventh rod, however, was the first interior rod of the group and was near an SRM detector. As a consequence, the five short period alarms received all occurred while the eleventh rod was being pulled.

Short period alarms are normal occurrences when pulling control rods. When a short period alarm is received the operator at the controls is required to stop pulling rods and monitor the nuclear instrumentation: Source Range Monitor chart recorders and period meters.

Three of the five short period alarms received were of short duration, less than 1-1/2 seconds, and were most likely caused by noise induced by the Reactor Manual Control System used to withdraw the control rods. The remaining two alarms were about 18 and 39 seconds in duration.



## Attachment A

### RESPONSE TO NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTIES EA 86-61

The operator stopped pulling rods and monitored the nuclear instrumentation when these alarms occurred. In both cases the alarms cleared before the operator proceeded with the rod pull. In the first case the SRM chart recorder indicated that the count rate was stabilizing before the operator proceeded. In the second case the count rate was still increasing when the SRM chart recorder stopped inking.

During the time the chart recorder stopped inking, the operator should have discontinued pulling rods and corrected the problem with the recorder. However, the operator completed pulling the eleventh rod during this time observing the indicator on the chart recorder to monitor the pull, and no short period alarms were received.

The five short period alarms provided the operator at the controls, the NSS, NASS, CRNSO and SOA an opportunity to discover the rod pull error. However, even though the rod pull error was not identified until after the eleventh rod was completely pulled, the operator did take action with respect to the alarms.

Paragraph II(B) - Detroit Edison admits that Procedure 21.000.01, in effect at the time of this inspection and during the rod pull error on July 1, 1985, defined the required turnover for the NSO in charge of the control room but did not define any turnover requirements for the NSO assigned to duties in the control room but who was not in charge.

The Company's reason for this was that typically there are three or four NSOs assigned to each shift. Depending on the status of the plant and what activities are ongoing, one of these NSOs may be assigned to assist in an activity in the control room. Examples include performing surveillance tests or starting equipment, or as in the case cited, pulling control rods to support plant startup. Because these assignments are rather specific and normally of short duration, providing guidance in the procedure on turnover of these activities had not been considered.

Attachment A

RESPONSE TO NOTICE OF VIOLATION AND  
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Paragraph II(C) - Detroit Edison admits that the NSS log for July 1 and 2, 1985, does not contain any entries for the out-of-sequence rod pulls that occurred between 11:40 and 11:59 p.m. on July 1, 1985.

The Company's reason for this was that the NSS did not fully appreciate the significance of not making a log entry at the time of the rod pull error. The NSS did promptly initiate a Deviation Event Report which provided for further evaluation of the event.

Paragraph II(A), (B) and (C) - The Company has taken or is taking the following actions to avoid a further noncompliance with the result that it is presently in full compliance.

The Plant Manager or the Superintendent-Operations has met with each NSS, NASS and SOA on an individual basis to clarify their roles and to emphasize their onshift authority and responsibilities.

The role of the SOA and Shift Technical Advisor was reviewed with the NSS and NASS. They were encouraged to use these personnel as well as other qualified personnel on shift, and to actively seek out their opinions or observations prior to making decisions.

The Shift Nuclear Engineers were directed to take a more active role in rod pulls and insertions, and the evaluation of unplanned reactivity changes.

Shift personnel were directed to improve their log keeping practices and to ensure that events such as the out of sequence rod pull are logged.

A senior reactor operator (control room SRC) has been assigned to the control room to enhance supervision of significant control room activities. Furthermore, the role of the Control Room NSO has been further clarified as an assistant to the control room SRO in directing plant activities.

## Attachment A

### RESPONSE TO NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTIES EA 86-61

Operations personnel have been directed that plant startups and shutdowns, planned reactivity manipulations and plant testing activities will not continue until all members of the shift team, including shift advisors have completed their respective turnovers and the NSS authorizes them to proceed.

Procedure 21.000.01, "Shift Operations and Control Room", has been revised to provide turnover requirements for personnel assigned to duties in the control room whose duties are not discussed elsewhere. Turnovers of this type will be periodically evaluated by the Operations Engineer for adequacy and thoroughness.

The Operations Engineer, or his designee, frequently reviews the NSS and control room logs to assure that they are an accurate record of plant operations. Supplemental to this, the Superintendent-Operations is reviewing these logs periodically, and provides feedback to the Operations Engineer and NSS regarding the quality of the log entries.

Paragraph III - Detroit Edison admits that during the period July 1-2, 1985, eleven control rods were mispositioned during a reactor startup, a significant condition adverse to quality, and the Nuclear Shift Supervisor did not properly evaluate the causes or effects of the error nor correct all the root causes of the event and made a decision to resume rod pulling only a short time after the rods were repositioned to their proper positions. The Nuclear Shift Supervisor's decision to resume startup activities immediately was made without an adequate review of all the available nuclear instrumentation data, without consulting the shift advisors, and without an appreciation of the significance of the lack of management instruction, direction, oversight, and attention to licensed activities contributing to the incident.

The reason for the violation was that while the NSO at the controls was reinserting control rods, the NSS came to the control panel to discuss the incident with the operator and to assess the incident. The NSS was satisfied that the operator recognized his error and would be able to proceed with the rod pull sequence correctly once all the mispositioned rods were reinserted. The NSS then authorized the NSO to proceed with the startup. Later the NSS called the Operations Engineer to inform him of the rod pull error. The NSS completed a Deviation Event Report for presentation at the Corrective Action Review Board (CARB) in the morning for further evaluation of the event.

Attachment A

RESPONSE TO NOTICE OF VIOLATION AND  
PROPOSED IMPOSITION OF CIVIL PENALTIES EA 36-61

The Company has taken the following actions to avoid a further noncompliance with the result that it is presently in full compliance on these matters.

All licensed operators and many support personnel attended presentations made by the Vice President Nuclear Operations and the Plant Manager regarding the rod pull error. The presentation was very detailed in its description of the event, the root causes and corrective actions. The presentation was made to make these personnel aware of the event and its significance.

As noted previously, the Plant Manager or the Superintendent-Operations has met with each NSS, NASS and SOA on an individual basis to clarify their roles and to emphasize their onshift authority and responsibilities.

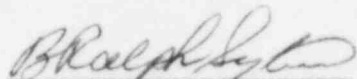
The role of the SOA and Shift Technical Advisor was reviewed with the NSS and NASS. They were encouraged to use these personnel as well as other qualified personnel on shift, and to actively seek out their opinions or observations prior to making decisions.

NSS and NASS have again been directed that plant and system operating transients must be evaluated prior to resumption of activities. The NSS is expected to determine the appropriate review organization based on the specific incident and is the only on-shift person authorized to direct resumption of normal operations.

Attachment A

RESPONSE TO NOTICE OF VIOLATION AND  
PROPOSED IMPOSITION OF CIVIL PENALTIES EA 86-61

I, B. RALPH SYLVIA, do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.



B. RALPH SYLVIA  
Group Vice President  
Nuclear Operations

On this 1<sup>st</sup> day of August, 1986, before me personally appeared B. Ralph Sylvia, being first duly sworn and says that he executed the foregoing as his free act and deed.



Notary Public

MARCIA BUCK  
Notary Public, Washtenaw County, MI  
My Commission Expires Dec. 28, 1987

*Acting in Monroe County,  
MI*