UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
801 WARRENVILLE ROAD
LISLE, ILLINOIS 60532-4351

November 20, 1997

Public

EA 97-201

Mr. D. R. Gipson
Senior Vice President
Nuclear Generation
The Detroit Edison Company
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: SUMMARY OF AUGUST 6, 1997, PREDECISIONAL ENFORCEMENT CONFERENCE TO DISCUSS THREE APPARENT CORRECTIVE ACTION VIOLATIONS

Dear Mr. Gipson:

This refers to a Predecisional Enforcement Conference conducted by Mr. A. Bill Beach, Regional Administrator, and other members of the Region III and Headquarters staff on August 6, 1997, at the NRC Region III office in Lisle, Illinois. The purpose of this conference was to discuss three apparent violations of 10 CFR Part 50, Appendix B, Criterion XVI. We have enclosed a copy of the draft proposed violations provided to you at the conference (Enclosure 1), a copy of the handout you provided at the meeting (Enclosure 2), and a partial list of conference attendees (Enclosure 3).

Inspection Reports No. 50-341/97002 and 50-341/97003, dated June 2, 1997, and July 1, 1997, respectively, discussed the background associated with three apparent violations for inadequate corrective actions.

Your staff opened the conference with an outline discussing each of the proposed violations, how they occurred, and their perspective on the safety significance for each issue. When asked if they agreed with the violations, your staff strongly indicated that they did not agree with the level of the violations being characterized as severity level III in accordance with NUREG-1600, "General Statement of Policy and Procedures for NRC Enforcement Actions." During the conference, and subsequent internal discussion among NRC management, your concerns were thoroughly reviewed.

You were notified by separate correspondence (Inspection Report No. 50-344/97013 and letter dated September 23, 1997) of our decision regarding the enforcement action, based on the information presented and discussed at the Predecisional Enforcement Conference. No response is required to this correspondence.

In accordance with 10 CFR Part 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures, will be placed in the NRC Public Document Room.

IE45

IE01

We will gladly discuss any questions you have concerning this Predecisional Enforcement Conference.

Sincerely,

Marc J Dapas for

Geoffrey E. Grant, Director
Division of Reactor Projects

Docket No. 50-341
License No. NPF-43

Enclosures: As Stated

cc w/encls: N. Peterson, Supervisor
of Compliance
P. A. Marquardt, Corporate
Legal Department
James R. Padgett, Michigan Public
Service Commission
Michigan Department of
Environmental Quality
Monroe County, Emergency
Management Division

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Docket File w/encl
PUBLIC IE-01 w/encl
OC/LFDCB w/encl
SRI Fermi w/encl
RIII Enf Coordinator w/encl
TSS w/encl
J. Goldberg, OGC
R. Zimmerman, NRR
Project Manager, NRR w/encl
DRP w/encl
RIII PRR w/encl
A. B. Beach w/encl
Deputy RA w/encl
DRS w/encl (2)
J. Lieberman, OE

DOCUMENT NAME: G:\ferm\fer97enf.ltr
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OFFICE	RIII		RIII		RIII		RIII	
NAME	Jordan:dp	E	Grant					
DATE	11/5/97		11/ /97					

OFFICIAL RECORD COPY

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Sincerely,

/s/Marc L. Dapas for

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Division of Reactor Projects

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See attached concurrence
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OFFICE	RIII		RIII		RIII		RIII	
NAME	Jordan:dp	MLE	Grant	MLD				
DATE	11/9/97		11/9/97					

OFFICIAL RECORD COPY

A. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," requires that measures shall 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 condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management.

Contrary to the above:
As of December 26, 1996, following the licensee's identification on August 22, 1996 of a significant condition adverse to quality -- containment oxygen monitoring instrumentation calibration procedures introduced a non-conservative error -- corrective actions were not taken to preclude recurrence as demonstrated by the duration of the out-of-calibration oxygen monitoring instruments.

B. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," requires that measures shall 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 condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management.

Contrary to the above:
From 1989 until 1997 the licensee had not established measures to assure that the cause of a significant condition adverse to quality -- a potential motor pinion gear problem that was documented in Limitorque Maintenance Update 89-01 -- was determined and corrective action taken to preclude recurrence. Consequently, a motor pinion gear problem recurred and was identified when High Pressure Coolant Injection Valve E4150-F006 failed to perform during the conduct of a surveillance test on February 16, 1997.

The apparent violations discussed in the predecisional enforcement conference are subject to further review and are subject to change prior to any resulting enforcement action

C. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," requires that measures shall 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 condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management.

Contrary to the above:
As of April 1997, following the licensee's identification of a condition adverse to quality -- a Motor Control Center (MCC) fuse disconnect switch in a safety system failed to remain closed on October 26, 1995 -- measure were not established to determine the cause of the fuse disconnect switch failure and corrective actions were not taken to prevent the failure of multiple switches in safety related applications. Consequently, several safety related MCC fused disconnect switches failed to remain closed in March and April 1997.

DETROIT EDISON

PRE-DECISIONAL
ENFORCEMENT CONFERENCE
August 6, 1997

ENCLOSURE 2

AGENDA/SPEAKERS

Opening Remarks -	D. Gipson
Primary Containment O_2 Analyzer Calibration -	J. Plona/P. Fessler
MOV Motor Shaft Set Screw -	P. Fessler
480V MCC Fused Disconnect Switch Maintenance -	J. Green

AGENDA/SPEAKERS *(cont'd)*

Preventive Maintenance Program Enhancements -	P. Fessler
Corrective Action Program Enhancements -	J. Moyers
Concluding Statement -	D. Gipson/P. Fessler

Primary Containment O_2 Analyzer Calibration

BACKGROUND

- April 1996 startup from forced outage
  - System Engineer questioned O_2 analyzer readings of 0%
  - Consistent with grab samples

Primary Containment O_2 Analyzer Calibration

BACKGROUND (cont'd)

- May 1996 calibration
  - System Engineer questioned differences in readings when one O_2 analyzer calibrated in inerted environment
  - Differences were within acceptance criteria (+/-1.1%)
- System Engineer continued data collection and monitoring of system performance

Primary Containment O_2 Analyzer Calibration

BACKGROUND (cont'd)

- July 1996 - System Engineer confirmed zero shift from plant investigation
  - "Zero Shift" anomaly is a non-conservative shift of the monitor scale when the O_2 analyzer is calibrated while Primary Containment is de-inerted and then used when the Primary Containment is inerted.
  - Both O_2 analyzers had been calibrated in an inerted environment

Primary Containment O_2 Analyzer Calibration

BACKGROUND (cont'd)

- August 1996 - System Engineer notified Operations and Maintenance of calibration anomalies in inerted environment
- September 1996 - O_2 analyzers calibrated prior to upcoming refueling outage
- October 1996 - Procedures revised to require O_2 analyzer calibration in an inerted environment

Primary Containment O_2 Analyzer Calibration

BACKGROUND (cont'd)

- December 1996 - System Engineer notifies Operations of expiration of O_2 analyzer calibration interval and provides recommendation concerning calibration before startup
  - Recommendation is incorporated into night orders
  - Recommendation by System Engineer questioned by resident inspector (DER 96-1885 issued)
  - Drywell inerted in Mode 4 and analyzers calibrated

Primary Containment O_2 Analyzer Calibration

BACKGROUND (cont'd)

- December 1996 to March 1997 - Ongoing discussions with vendor and other utilities
  - Fermi-2 and vendor laboratory tests conducted
- March 1997 - LER 97-004 issued for miscalibration of analyzers

Primary Containment O_2 Analyzer Calibration

BACKGROUND (cont'd)

- July 1997 - Fermi-2 confirmed TS 3.6.6.2 limits (4% O_2) were never exceeded
  - Confirmation provided by comparison of O_2 Analyzer readings to grab sample results and other correctly calibrated analyzers
  - August 1997 - LER 97-004, Supplement 1 issued to report results of TS 3.6.6.2 confirmation

Primary Containment O_2 Analyzer Calibration

CAUSES

- Lack of understanding by the vendor and Fermi-2 personnel of the zero-shift anomaly caused by differing calibration conditions
- Several missed opportunities to initiate Corrective Action Program
- Operators did not question implications of night order actions associated with calibrating O_2 analyzers in de-inerted environment

Primary Containment O_2 Analyzer Calibration

CORRECTIVE ACTIONS

- Procedures were revised as issue was further defined and understood
- TS changes will be processed to allow calibration to be delayed until an inerted environment is achieved
- CARD Process
- Operational Excellence Plan
  - ODIs
  - Operator liaison to System Engineering

Primary Containment O_2 Analyzer Calibration

SAFETY SIGNIFICANCE

- Safety significance minimal since O_2 limit was not exceeded
- H_2 analyzers operable

MOV Motor Shaft Set Screw

BACKGROUND

- April 1988 - November 1989 - MOV Operator rebuild procedures revised to incorporate a number of industry identified issues (Including pinion gear set screw)
  - Limitorque issues Maintenance Update 89-1

MOV Motor Shaft Set Screw

BACKGROUND (cont'd)

- Corrective maintenance for set screw established on an "as-available" versus "risk significant" basis
  - Failure rate did not warrant a higher priority
  - Intrusiveness and one time nature of work required CM rather than PM
  - Limitorque did not provide recommendation regarding timeliness of implementation
  - Formal PRA insights not available in this time period
  - GL 89-10 program in its infancy (lots of evolutions, PMs, what should be done)

MOV Motor Shaft Set Screw

BACKGROUND (cont'd)

- 1993 and 1994 (DERs 93-0338 and 94-0319)- Valve failures documented due to set screw issues
  - Valve failures not outside of expected site valve failure rate
- February 1997 - E4150F006 Failure (LER 97-002)
  - Set screw installed and lockwired
  - Key staked
  - Set screw not countersunk to shaft (dimpled)
  - Set screw overtorqued

MOV Motor Shaft Set Screw

CAUSE

- Did not properly prioritize implementation of vendor guidance
- Did not track implementation to completion

MOV Motor Shaft Set Screw

CORRECTIVE ACTION

- Evaluated MOVs for risk significance
- Corrected 67 most risk significant MOVs in 1997 prior to startup from Forced Outage
- Set screw countersinking of remaining risk significant and maintenance rule MOVs to be completed by end of RFO6
- Expectations on Work Package documentation (Operations Excellence Plan Item III.1.C.3)

MOV Motor Shaft Set Screw

SAFETY SIGNIFICANCE

- Safety significance minimal due to availability of the remaining ECCS systems, RCIC, and SBFW

480 V MCC Fused Disconnect Switches

BACKGROUND

- 1995 - Investigation (DER 95-0846) begun on sticking and difficulty in closing fused disconnect switches
  - Identified pre-1995 unexpected openings in DER search and occasional undocumented instances of sluggish switch operation
  - Cause identified as inadequate lubrication
  - No vendor manual guidance on lubrication
  - No approved lubricant for Fermi for a time
  - Investigation concluded unexpected openings to be random with low frequency

480 V MCC Fused Disconnect Switches

BACKGROUND (cont'd)

- Corrective Action for DER 95-0846
  - PMs revised to require lubrication
  - Identified approved lubricant in 1996
  - Prioritization and implementation established based on
    - » Low frequency compared to industry data for PRA
    - » Normal PM schedule
    - » System outage schedule

480 V MCC Fused Disconnect Switches

BACKGROUND (cont'd)

- Vendor-recommended cycling interval was changed from 18 months
- Investigation did not analyze unexpected opening in combination with an external event (seismic)
- Investigation did not evaluate lubricant mixing effects
- Approx. 70 of 300 safety-related fused disconnect switches had PM completed prior to forced outage

480 V MCC Fused Disconnect Switches

- Corrective Actions to clean, lubricate and cycle fused disconnects were shown to be effective based on no repeat events for over one year
- LER 97-008 issued May 1997 to document identified cases of unexpected opening of fused disconnect switches

480 V MCC Fused Disconnect Switches

CAUSE

- Lack of adequate implementation of vendor guidance for periodic cycling of fused disconnect switches

480 V MCC Fused Disconnect Switches

CORRECTIVE ACTIONS

- Cleaned, lubricated and cycled fused disconnect switches connected to safety related and balance of plant loads prior to startup from forced outage
  - PM program for the disconnect switches rebaselined
  - MCC PM events created for lubrication and cycling of fused disconnect switches at 18 months
  - Control group of disconnects identified
  - Monitoring of Safety Tagging Records for successes
    - » No unexpected openings since this has begun

480 V MCC Fused Disconnect Switches

CORRECTIVE ACTIONS (cont'd)

- Evaluation of mixing lubricants found compatible with each other and MCC components
- Documentation of MCC fused disconnect problems
- Trained personnel on proper latching indications prior to startup from forced outage
- Evaluating replacement of MCC equipment
- Enhancement of PM Program

480 V MCC Fused Disconnect Switches

SAFETY SIGNIFICANCE

- Analysis of identified unexpected opening of fused disconnect switches supports the conclusion that they are within the random frequency for this type of switch, and therefore do not represent a significant increase in risk
  - 4 documented cases of unexpected opening of safety related fused disconnect switches since 1993
  - 7 documented cases of unexpected opening of non-safety related fused disconnect switches to fully latch since 1993

PM Program Enhancements

- PMs completed for restart
  - MCC Fused Disconnect Switches
  - Most Risk Significant MOVs
  - Switchyard
- Increased System Engineering involvement

PM Program Enhancements

- Self Assessment of three pilot systems (Switchyard, HPCI, GSW)
  - Using outside technical experts (Duke Engineering)
  - Comparing vendor guidance to existing PMs
  - Providing technical change justifications
  - Incorporating Maintenance Rule insights
  - Planned benchmarking with USA/EPRI

Corrective Action Program Enhancements

BACKGROUND

January 1997 - Team Formed

- Multidisciplined group, all functional areas, contractors, union and management
- 2 days of facilitated team building
- Reviewed historical problems with process

Corrective Action Program Enhancements

BACKGROUND (cont'd)

- February - August 1997 - Process Development
  - Benchmarked other utilities/INPO
  - Employee Feedback
  - Drafted Procedures
    - » Corrective Action
    - » Cause Analysis
  - Dry Runs
  - Met with Union management

Corrective Action Program Enhancements

BACKGROUND (cont'd)

- Peer Review
- Training of Site Personnel

Corrective Action Program Enhancements

CARD PROCESS

- New Name
  - Condition Assessment Resolution Document
- Simplified initiation process
- Up front Operability/Reportability Determination by Operations and Licensing
- Ownership Committee
  - Review significance level
  - Assign Responsible Organization for assessment/resolution

Corrective Action Program Enhancements

CARD PROCESS (cont'd)

- CARD Review Board
- Effectiveness review
- Team approach
- Enhanced trending
- Root Cause procedure

Corrective Action Program Enhancements

CARD PROCESS (cont'd)

- Training
  - Learning Maps to discuss "Why"
  - CARD procedure to discuss "How"
  - Cause Analysis for small group
  - Goal - Increase ownership, accountability, teamwork
  - Think preventive versus reactive

Corrective Action Program Enhancements

CARD PROCESS (cont'd)

- Implementation
  - Organization Unit Heads to collectively agree on implementation - August 1997
  - INPO Review - September 1997
  - Effectiveness reviews scheduled after implementation for course correction

Closing Comments

- Actively pursuing personnel issues
  - New personnel in key management positions
  - Goals are to instill:
    - » Involvement, Ownership, Accountability, Teamwork
    - » Questioning Attitude
    - » Low Tolerance for Problems
  - Performing Benchmarking and Assessments

Closing Comments (cont'd)

- Emphasizing Conservative Decision Making
  - » Expectations
  - » Reinforcement
  - » Demonstration
- Resolution being addressed is for old versus new problems

ENCLOSURE 3

PARTIAL LIST OF CONFERENCE ATTENDEES ON AUGUST 6, 1997

Detroit Edison Company (DECo)

P. Borer, Vice President, Nuclear Generation
P. Fessler, Plant Manager
D. Gipson, Senior Vice President, Nuclear Generation
J. Green, Superintendent, Maintenance Support
J. Moyers, Director, Nuclear Quality Assurance
W. O'Connor, Director, Nuclear Assessment
N. Peterson, Director, Licensing
J. Plona, Technical Director

U. S. Nuclear Regulatory Commission

A. Beach, Regional Administrator, Region III
G. Grant, Director, Division of Reactor Projects, Region III
J. Grobe, Director, Division of Reactor Safety, Region III
M. Jordan, Chief, Reactor Projects Branch 5, Region III
A. Kugler, Project Manager, NRR
G. Harris, SRI, Fermi
N. O'Keefe, RI, Fermi
J. Gavula, Chief, Engineernig Specialist 1, Division of Reactor Safety, Region III
H. Walker, Reactor Inspector, Division of Reactor Safety, Region III