

Detroit
Edison

Frank E. Agosti
Vice President
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Nuclear
Operations

September 30, 1986
VP-86-0073

Office of Nuclear Reactor Regulation
Ms. Elinor G. Adensam, Director
Project Directorate No. 3
Division of BWR Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Ms. Adensam:

- References: 1) Fermi-2
NRC License No. NPF-43
NRC Docket No. 50-341
- 2) Detroit Edison to NRC Letter,
"Additional Information on Diesel
Generators", NE-85-0460, dated March 6,
1985.
- 3) Detroit Edison to NRC Letter,
"Clarification of Diesel Generator
Commitments", NE-85-0459, dated March
14, 1985.
- 4) Detroit Edison to NRC Letter,
"Transmittal of Additional Information
Relative to Diesel Generator
Commitments", NE-85-0462, dated March
15, 1985.
- 5) Detroit Edison to NRC Letter, "Revision
of Emergency Diesel Generator Crankshaft
Bearing Reliability Demonstration Test
Program", VP-86-0025, dated March 18,
1986.
- 6) Detroit Edison to NRC Letter,
"Clarification of EDG 13 Thrust Bearing
Special Inspection"
- 7) Detroit Edison to NRC Letter, "Emergency
Diesel Generators", VP-86-0099, dated
July 24, 1986.

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Subject: Request for Amendment of License Condition
on Emergency Diesel Generator (EDG) Lube
Oil Surveillance Program

Pursuant to 10CFR50.90, Detroit Edison Company hereby proposes to amend Operating License No. NPF-43 for the Fermi 2 plant. The proposed amendment removes from License Condition 2.C (10) the commitment for the quarterly inspection and subsequent spectrographic analysis of the EDG lube oil filter. Furthermore, it removes License Condition 2.C (10) from the Operating License.

Detroit Edison has evaluated this request against the criteria of 10CFR50.59 and 10CFR50.92 and determined respectively that no unreviewed safety question and no significant hazards considerations are involved.

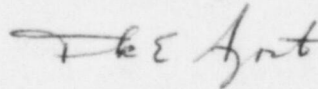
The Fermi-2 Onsite Review Organization has approved and the Nuclear Safety Review Group has reviewed the proposed changes and concurred with the enclosed determinations.

Pursuant to 10CFR170.12(c) enclosed with this amendment request is the application fee of one hundred fifty dollars (\$150.00).

In accordance with 10CFR50.91, Detroit Edison has provided a copy of this letter to the State of Michigan.

If you have any questions, please contact Mr. Paul Christofakis at (313) 586-4072.

Sincerely,

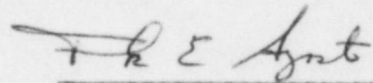


Attachments

cc: Mr. M. D. Lynch
Mr. W. G. Rogers
Mr. G. C. Wright
Supervisor, Advance Planning and Review Section,
Michigan Public Service Commission
USNRC Document Control Desk
Washington, D. C. 20555

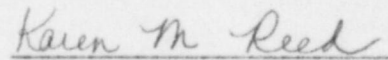
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I, FRANK E. AGOSTI, do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.



FRANK E. AGOSTI
Vice President
Nuclear Operations

On this 30th day of September, 1986,
before me personally appeared Frank E. Agosti, being
first duly sworn and says that he executed the foregoing
as his free act and deed.



Notary Public

KAREN M. REED

Notary Public, Monroe County, Mich.
My Commission Expires May 14, 1990

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Background/Discussion

In March 1985, Detroit Edison proposed several corrective actions intended to assure the reliability of the Fermi 2 EDGs (References 2, 3 and 4). These commitments were incorporated by reference in License Condition (10), in Section 2.C of the Fermi 2 Operating License.

In response to the EDG bearing failures at Fermi-2 in January 1985, Detroit Edison proposed in the Reference 3 letter that the EDG lube oil filter be inspected and replaced quarterly, rather than annually. This commitment encompassed visual inspection of a sample of the filter disks to determine whether flakes of bearing material were present on the filter. If metal flakes were found, a bearing gap check would be required. In a companion commitment, Detroit Edison proposed spectrographic analysis of the lube oil filter media. Detroit Edison initiated quarterly inspections of the filters in May 1985. The Commission is aware of the EDG bearing failures which occurred in November, 1985. No metal flakes were found on the filter disks, and nothing in the spectrographic analysis of the filter media would have predicted these bearing failures.

The inspection procedure for the EDG lube oil filter requires opening the filter housing, draining the oil in the filter housing, replacing the filter disk assemblies, refilling the filter housing, and returning it to service. This process entails the risk of introducing foreign material while the filter housing is open, and the risk of making other errors while replacing the filter assembly. It also requires that the diesels stay out of service for several hours.

Experience has shown that as stated in the Region III Inspection Report No. 85046, this filter inspection and the spectrographic analysis of the lube oil filter media are ineffective in predicting incipient bearing failures. Furthermore, it presents the risk of introducing foreign material or making other errors while working on the filters. Therefore, Detroit Edison requests that the requirement for this inspection and analysis be deleted from the Fermi-2 license.

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Commitments made in the Detroit Edison letters of March 6, 14, and 15, 1985 were superceded in part and supplemented by commitments made because of Detroit Edison's EDG reliability program and response to the safety evaluation report related to EDGs (References 5 and 7 respectively as well as Reference 6). Table 1 of this letter presents the commitments made in References 2 through 7 and their status.

It is possible that the EDG maintenance program will require additional refinements. Changes to our commitments will not be made without prior NRC review and concurrence. Hence, it is beneficial to both the Staff and Detroit Edison to have the flexibility of being able to change commitments without having to amend the license.

Therefore, Detroit Edison requests that the license condition pertaining to the remaining diesel surveillance requirements other than what was discussed above be deleted from the Fermi-2 license.

Safety Evaluation

The proposed change to the Fermi 2 Operating License was reviewed against the criteria of 10CFR50.59 and found to involve no unreviewed safety question.

Is the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report increased?

No. The EDGs are the only equipment involved in the proposed change. The quarterly lube oil filter inspections were proposed to augment the EDG surveillance program until additional data were obtained. Detroit Edison hoped that increasing the frequency of filter inspections would provide additional information that might reveal an incipient bearing failure. Subsequent bearing failures indicate that the filter inspections and analysis do not provide this information. The elimination of this commitment does not deprive the Fermi-2 operators from any useful data regarding potential diesel bearing failures. Furthermore, it decreases the probability of introducing foreign material into the lube oil system while the inspection is performed and the probability of errors while replacing the filter assembly. Also, by decreasing the time the EDGs are inoperable for filter surveillance it increases the time the EDG is available.

The proposed deletion of the license condition is considered strictly an administrative change and does not affect accidents or malfunctions evaluated in the Fermi-2 FSAR. The mechanics of tracking and implementing commitments at Fermi-2 remains the same. The commitments themselves are not amended in any way and they provide for increased diesel reliability and availability.

Therefore, the proposed changes do not increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report.

Is the possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report created?

No. Experience has shown that the more frequent lube oil filter inspection and spectrographic analysis do not reveal incipient bearing failures. The EDG reliability demonstration test program and other measures described in the Reference 5 letter provide assurance that the Fermi-2 EDGs are a reliable source of alternate standby power. Eliminating the requirement to inspect and replace the lube oil filter quarterly and to analyze the filter media, recognizes the low value of the more frequent filter inspection and analysis. Furthermore, it does not affect plant operating conditions, the way in which any equipment is operated, and does not create any new failure modes.

The proposed change of deleting the license condition is considered administrative and does not create unanalyzed accidents or malfunctions. Controls for implementing these commitments are in place and they are not affected by the change.

Therefore, the proposed changes do not create the possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report.

Is the margin of safety as defined in the basis for any technical specification reduced?

No. The lube oil filter inspections and the spectrographic analysis have been shown to be unreliable in detecting incipient bearing failures. They were proposed by Detroit Edison and accepted by the Staff to detect bearing failures and improve engine availability. The deletion of the inspection and analysis has no effect on the margin of safety of the Fermi-2 EDGs as defined in the bases of the EDG-related Technical Specifications.

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The proposed deletion of the license condition has no effect on the margin of safety; It is an administrative change only and does not affect implementation of commitments.

Significant Hazards Consideration

The proposed change to the Fermi-2 Operating License was reviewed against the criteria of 10CFR50.92 and found to involve no significant hazards considerations.

The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The quarterly lube oil filter inspections were proposed to augment the EDG surveillance program until additional data were obtained. Detroit Edison hoped that increasing the frequency of filter inspections and spectrographic analyses from annually to quarterly would provide additional information that might reveal an incipient bearing failure. Subsequent bearing failures indicate that the filter inspection and analysis do not provide this information. The elimination of this commitment reduces the probability of introducing foreign material into the lube oil system while the filter housing is open, and the probability of others errors while replacing the filter assembly.

The proposed deletion of the license condition is considered strictly an administrative change and does not affect the safety analyses presented in the Fermi 2 FSAR. The mechanism that DECo utilizes for tracking and implementing its commitments remains the same. The commitments themselves are not changed in any way.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

Experience has shown that the more frequent lube oil filter inspection and spectrographic analysis do not reveal incipient bearing failures. The EDG reliability demonstration test program and other measures described in the Reference 5 letter provide assurance that the Fermi-2 EDGs are a reliable source of alternate power. Eliminating the requirement to inspect and replace the lube oil filter quarterly and to analyze the filter media, recognizes the low value of the more frequent filter inspection and analysis. Furthermore, it decreases the possibility of

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introducing foreign material into the lube oil system or other errors while working on the filter.

The change of deleting the license condition is considered administrative. It does not eliminate the commitments and their implementation. These commitments have been proposed by Detroit Edison and accepted by the Staff to improve diesel reliability and that does not change.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

The proposed change does not involve a significant reduction in the margin of safety.

The lube oil filter inspections and the spectrographic analysis have been shown to be unreliable in detecting incipient bearing failures. Thus deleting the requirement for quarterly inspection and analysis has no effect on the margin of safety in the operation, surveillance and maintenance of the Fermi-2 EDGs as defined in the bases to the EDG-related Technical Specifications.

The proposed deletion of the license condition does not alter implementation of commitments and necessary follow up. The tracking and follow up mechanism for commitments remains the same. Thus, deleting the license condition has no effect in the margin of safety.

Environmental Impact

Detroit Edison has reviewed the proposed Operating License changes against the criteria in 10CFR51.22 for environmental considerations. As shown above, the proposed changes concern maintenance procedures and instructions and elimination of tests. They do not involve a significant hazards consideration, nor increase the types and amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, Detroit Edison concludes that the proposed amendment meets the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.

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CONCLUSION

It is concluded, based on the considerations discussed above that by implementing the proposed changes no unreviewed safety question and no significant hazards considerations are involved. Fermi-2 will still continue to comply with all applicable regulations. Furthermore, it is concluded that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

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procedures and measures described in Section 9.5.1 and Appendix E of SSER #5 and #6 shall continue to be implemented, including removal of power from the Division 1 cooling tower bypass valve (No. E1150-F603A) and from either the single series valve (No. E1150-F008) in the reactor heat removal (RHR) system or the two parallel RHR suction valves (Nos. E1150-F608 and E1150-F009) during normal plant operation until the independent alternate system is declared operational.

- (10) Emergency Diesel Generator Lube Oil Surveillance Program
(Section 9.5.7, SSER #5)

DELETED

DECo shall implement its commitments regarding the surveillance program for the lubricating oil system of the emergency diesel generators as described in its letters dated March 6, March 14 and March 15, 1985.

- (11) Low-Pressure Turbine-Disc Inspection (Section 10.2.2, SER)

DECo shall perform an inspection of the low-pressure turbine-discs during the second refueling outage, including volumetric examination of the disc base using ultrasonic techniques. The frequency of subsequent inspections shall be in accordance with the turbine manufacturer's recommendations.

- (12) Retention of Persons with BWR Operating Experience on Shift
(Section 13.1, SSER #5)

At all times the plant is in an operating condition other than cold shutdown or refueling, DECo shall have a licensed senior operator on each shift who has had at least six months of hot operating experience on a similar type plant, including at least six weeks at power levels greater than 20 percent of full power, and who has had start-up and shutdown experience. For those shifts where such an individual is not available on the plant staff, DECo shall provide an advisor who has had at least four years of power plant experience, including two years of nuclear plant experience, and who has had at least one year of experience on shift as a licensed senior operator at a similar type facility. Use of advisors who were licensed only at the reactor operator level or who otherwise do not fully meet the criteria for shift advisor, will be evaluated by the NRC staff on a case-by-case basis. As a minimum, DECo shall train these advisors on the procedures, Technical Specifications and plant systems for the Fermi-2 facility and DECo shall examine the advisors on these topics at a level which will assure their familiarity with the plant. For each shift, the remainder of the shift crew shall

EDG-Related Commitments Made
in References 2 through 7

<u>Reference</u>	<u>Commitment</u>	<u>Remarks</u>
NE-85-0460 (March 6, 1985)	1) Following prelubrication, prior to planned starts, the prelube pump will not be secured until the EDG reaches full speed (900 RPM). After the EDGs are modified to permit slow idle speeds securing the pump will be allowed when engine reaches idle speed.	
	2) After 20 starts have been conducted without prelubrication but not longer than 18 months the gap check will be performed.	Superceded by Item 17 below
	3) Lube oil filters will be inspected and replaced quarterly. The discovery of a visible accumulation of bearing material will trigger a gap check.	Propose to delete
	4) Monthly oil samples will be drawn from the pump while the engine is operating and will be analyzed for metal concentrations. The results will be trended for 18 months.	
	5) Detroit Edison will perform a spectrographic analysis of lube oil filter media.	Propose to delete
NE-85-0459 (March 14, 1985)	6) A gap check is performed after 20 dry starts but not longer than 18 month intervals. If gap is greater than recommended tolerance the	Clarifies Item 2 above

bearing will be replaced, or manufacturer consulted. If manufacturer recommends actions the engine will not be started until actions are completed.

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| 7) One additional criterion for performing gap checks is the sighting of flakes of bearing material on the filter. The sample will consist of a minimum of two discs from each of the seven filter stacks. Greater than an average of one fragment per disc for EDG 13 and 14 and two per disc for EDG 11 and 12 will initiate the inspection. | Clarifies
Item 3 above.
Propose to
delete |
| 8) Monthly oil samples will be taken while the engine is operating and the samples will be analyzed for metal concentrations. In addition a spectrographic analysis of material deposits of the lube oil filter media will be performed. | Same as Items
4 and 5 above.
Propose to
delete second
part. |
| 9) DECo will establish a program to evaluate and trend the data for use in prediction and detection of bearing failure. | |
| 10) DECo will perform a study of air boost prelube system to ascertain if improvements can be made to accomplish the system's intended objectives. | |
| 11) Until the modification for slow starting the diesels is implemented, the diesels will be accelerated automatically within the 10 second time period to synchronous speed and then the machine will be loaded slowly per the manufacturer's recommendations. | |
| 12) During surveillance testing due to loss of offsite power or loss of | |

diesel the other diesel will not be synchronized with the grid under conditions of grid instability to assure plant safety is not degraded.

VP-86-0025 (March 18, 1986)	13)	A special visual inspection of the No. 13 bearing will be performed at the next scheduled 18-month Technical Specification surveillance inspection.	Supplemented by Item 18 below.
	14)	Future gap checks will be performed every 6 months or after three non-manually-prelubed starts.	Superseded by Item 17 below
	15)	Detroit Edison will have an independent laboratory analyze several bearings with different conditions noted on each.	
VP-86-0058 (May 29, 1986)	16)	It is Detroit Edison's intent to visually inspect the EDG upper top half thrust bearing during the first refueling outage.	Supplemented by Item 18 below.
VP-86-0099 (July 24, 1986)	17)	Detroit Edison will perform bearing gap checks after every "dry" start of the EDGs until we obtain NRC agreement with an alternative frequency.	Supersedes Items 2 and 14 above
	18)	Detroit Edison will not exceed the "envelope of acceptability" established by the Demonstration Test Program without performing a special visual inspection on bearing 13 of EDG 13 until we obtain NRC agreement with an alternative.	Supplements Item 13 and 16 above