William T. O'Connor, Jr.
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Detroit Edison

A DTE Energy Company

10CFR50.90

May 23, 2002
NRC-02-0036

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington D C 20555-0001

References: 1) Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43

2) BWR Owners' Group Licensing Topical Report NEDO-32291-A Supplement 1, "System Analyses for Elimination of Selected Response Time Testing Requirements," dated October 1999

3) NRC Letter to BWR Owners' Group, dated June 11, 1999, transmitting Review of Boiling Water Reactor Owners Group (BWROG) Licensing Topical Report NEDO-32291, Supplement 1 "System Analyses for Elimination of Selected Response Time Testing Requirements."

4) BWR Owners' Group Licensing Topical Report NEDO-32291-A, "System Analyses for Elimination of Selected Response Time Testing Requirements," dated October 1995.

5) NRC Letter to BWR Owners' Group, dated December 28, 1994, transmitting Evaluation of Licensing Topical Report NEDO-32291, "System Analyses for Elimination of Selected Response Time Testing Requirements."

Subject: Proposed Technical Specification Change (License Amendment) - Response Time Testing

Pursuant to 10CFR50.90, Detroit Edison hereby proposes to amend the Fermi 2 Plant Operating License NPF-43, Appendix A, Technical Specifications (TS). The

A001

proposed amendment would modify TS to eliminate the response time testing requirements for the Reactor Protection System Instrumentation-reactor high steam dome pressure and reactor level–low, level 3 and for Primary Containment Isolation Instrumentation-main steam line isolation signals reactor vessel water level low low low, level 1 and main steam line high flow. Additional Response Time Testing requirements were eliminated in Amendment 111.

Enclosure 1 provides a description and evaluation of the proposed TS change. Enclosure 2 provides an analysis of the issue of significant hazards consideration using the standards of 10CFR50.92. Enclosure 3 provides the marked up pages of the existing TS to show the proposed change and a typed version of the affected TS pages with the proposed changes incorporated. Enclosure 4 contains the response to the conditions included in the NRC staff's safety evaluation accepting NEDO-32291-A Supplement 1. Enclosure 5 provides a list of commitments. Enclosure 6 provides a copy of the marked up TS Bases change pages for information.

Detroit Edison has reviewed the proposed TS changes against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, nor significantly change the types or significantly increase the amounts of effluents that may be released offsite. Additionally, the proposed changes do not significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, Detroit Edison concludes that the proposed TS changes meet the criteria provided in 10CFR51.22(c) (9) for a categorical exclusion from the requirements for an Environmental Impact Statement or an Environmental Assessment.

Detroit Edison requests that the NRC approve and issue these changes by January 1, 2003 with an implementation period of within 60 days following NRC approval. The requested approval date is based on the plan to implement this amendment approximately one month before the upcoming ninth refueling outage.

Should you have any questions or require additional information, please contact Mr. Norman K. Peterson of my staff at (734) 586-4258.

Sincerely,

Enclosures

cc: T. J. Kim
M. A. Ring
NRC Resident Office
Regional Administrator, Region III
Supervisor, Electric Operators,
Michigan Public Service Commission

I, WILLIAM T. O'CONNOR, JR., do hereby affirm that the foregoing statements are based on facts and circums tances which are true and accurate to the best of my knowledge and belief.

WILLIAM T. O'CONNOR, JR.
Vice President - Nuclear Generation

On this 23rd day of May, 2002 before me personally appeared William T. O'Connor, Jr., 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, MI
My Commission Expires 09/02/2005

Enclosure 1 to
NRC-02-0036

NRC-02-0036
ENCLOSURE 1

FERMI 2 NRC DOCKET NO. 50-341
OPERATING LICENSE NO. NPF-43

REQUEST TO RELAX RESPONSE TIME TESTING FOR REACTOR PROTECTIONS SYSTEM AND PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION TECHNICAL SPECIFICATIONS

DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGE(S)

I. DESCRIPTION

This letter is a request to amend Operating License No. NPF-43 for Fermi 2. The proposed amendment would modify Technical Specifications (TS) to eliminate the response time testing (RTT) requirements for TS 3.3.1.1, Reactor Protection System Instrumentation- reactor vessel water level-low, level 3 and reactor vessel steam dome pressure high and for TS 3.6.1.1, Primary Containment Isolation Instrumentation-main steam line flow-high and reactor vessel water level-low low low, level 1. Approval of the proposed License Amendment is requested by January 1, 2003, with the amendment being implemented within 60 days following approval. This timing will avert removing safety related equipment from service for surveillances associated with these instruments, before and during Refueling Outage RF09.

The Boiling Water Reactor Owners Group (BWROG) with Detroit Edison participation, has developed a Licensing Topical Report (LTR) for eliminating these surveillance requirements (reference 2). The NRC has approved this LTR (reference 3). The change proposed herein to the Fermi 2 TS is consistent with these references.

The LTR (reference 2) shows that other periodic tests required by Technical Specifications, such as channel calibrations, channel checks, channel functional tests, and logic system functional tests, provide adequate assurance that instrument response times are within acceptance limits.

The above stated position is supported by the guidance of IEEE 338-1977, endorsed by Regulatory Guide 1.118, Revision 2, which contains the following statement:

> "Response time testing of all safety related equipment, per se, is not required if, in lieu of response time testing, the response time of the safety equipment is verified by functional testing, calibration checks or other tests, or both. This is acceptable if it can be demonstrated that changes in response time beyond acceptable limits are accompanied by changes in performance characteristics which are detectable during routine periodic tests."

The analysis contained in NEDO-32291-A, Supplement 1 (reference 2), provides the basis for eliminating selected response time testing requirements. The analysis was performed for BWRs, and its applicability to Fermi 2 has been verified with regards to the proposed Technical Specification changes. Fermi participated in the

development of NEDO-32291-A Supplement 1 as documented in Appendix A of the NEDO document. NEDO-32291, Supplement 1, was submitted to the NRC for review as a topical report in December, 1997. The NRC approved the Topical Report by a Safety Evaluation Report (SER) issued in June, 1999 (reference 3).

The BWROG analysis includes the identification of potential failure modes of components in the affected instrumentation loops that could potentially impact the instrument loop response time. In addition, plant operating experiences were reviewed to identify response time failures and how they were detected. The failure modes identified were evaluated to determine if the effect on response time would be detected by other testing requirements contained in the Technical Specifications.

The results of the BWROG analysis demonstrate that any credible failure of the instrument loop components would either be bounded by a bounding response time (BRT) or would be detected by other Technical Specifications testing requirements, such as channel calibration, channel check, channel functional test, and logic system functional test. These other testing requirements are sufficient to identify failure modes or degradations in instrument response times and assure operation of the analyzed instrument loops are within acceptance limits. Furthermore, the BWROG has described various defense in depth issues (reference 2) which clearly demonstrate that from a realistic basis, there is no safety significance even if instrumentation loop response times are significantly longer than the loop BRTs. Therefore, potential errors in the conclusions of the analysis and BRTs resulting from unanticipated failure modes of components do not affect the overall conclusion that elimination of the identified response time testing requirements has no substantial detrimental impact on plant safety.

In Summary, NEDO-32291-A, Supplement 1, evaluations and plant specific conditions demonstrate that response time testing can be eliminated for the selected instrument channels.

Elimination of RTT results in safety benefits. These areas include the following:

- Minimizing the time when safety systems are out of service or otherwise incapable of responding to a degraded plant condition.
- Reducing the potential for inadvertent safety system actuations.
- Reducing the complexity of refuel outages.
- Reducing personnel radiation exposure.

- Allowing critical personnel to be used for more significant tasks.

In summary, the elimination of RTT for the selected channels has low safety significance and results in an overall safety benefit

II. EVALUATION OF THE PROPOSED CHANGES:

TS changes reflect elimination of response time testing for the following channels in accordance with references 2 and 4:

Reactor Protection System Instrumentation (TS 3.3.1.1)

- reactor vessel water level-low, level 3
- reactor vessel steam dome pressure high

Primary Containment Isolation Instrumentation (TS 3.3.6.1),
Main Steam Line Isolation:

- reactor vessel water level-low low low, level 1
- main steam line flow-high

The specific changes are as follows:

- Remove reference to Surveillance Requirement (SR) 3.3.1.1.17 from Table 3.3.1.1-1, Functions 3 and 4. This proposed change eliminates the requirement to perform response time testing for Reactor Protection System (RPS) Instrumentation- reactor vessel water level-low, level 3 and reactor vessel steam dome pressure high.

- Delete note 2 from SR 3.3.1.1.17. This change removes instructions that will no longer be applicable with the implementation of the Proposed Change.

- Remove reference to Surveillance Requirement (SR) 3.3.6.1.7 from Table 3.3.6.1-1, Functions 1.a and 1.c. This proposed change eliminates the requirement to perform response time testing for Primary Containment Isolation Instrumentation- reactor vessel water level-low low low, level 1 and main steam line flow-high.

- Delete SR 3.3.6.1.7. This SR will no longer be applicable with the implementation of the Proposed Change.

The TS Bases and Technical Requirements Manual will be revised to eliminate the response times, consistent with this change.

Reference 2 was approved based on the conclusion in reference 4 that there is a bounding time beyond which response time degradation can be detected during the performance of calibrations and other currently required surveillance tests. Reference 4 states that appropriate alternatives to Response Time Testing (RTT) were provided in accordance with Regulatory Guide 1.118, Revision 2, and IEEE 338-1977. RTT is to be eliminated for selected instrument channels based on the analyses in references 2 and 4, approved by the NRC in references 3 and 5, respectively.

A. Instrument Loop Logic Components

Relays of certain manufacturer and model numbers were evaluated in reference 2. A Failure Modes and Effects Analysis (FMEA) was performed for these components to show that the degree to which a component response time can degrade and still not be identified by other surveillance tests is limited. Reference 2 further defines the limit to which response time of a component can degrade without detection by other routine surveillances or calibration as the "bounding response time (BRT)" of that component. According to the analysis in reference 2, response time degradation beyond the BRT will be detected for these components by routine surveillances or calibration. RTT for these components can be eliminated when bounding response times for components in a loop plus the sensor response times are less than the response time required by the accident analysis.

The BRT for each channel is determined by the summation of the individual component responses in the trip system actuation logic. In accordance with Reference 2 Section 8.5.1, the limiting BRT for the sensors is derived from the current RTT acceptance criteria. This value plus the sum of the channel relay BRTs is compared to the current RTT Limit currently listed in the Technical Requirements Manual Tables TR 3.3.1.1-1 (RPS Instrumentation) and TR 3.3.6.1-1 (Primary Containment Isolation Instrumentation). This analysis also discusses compliance with the provisions of references 2 and 4 for the individual components and evaluation process for design changes.

B. Affected Instrument Channels

Fermi 2 evaluated the site-specific loop logic components against those that are covered in reference 2. Those components applicable to the requested changes are:

Agastat EGPI
GE HFA
Scram Contactor

The instrument loops covered by references 2 and 4 are those whose required response times, as set by the safety analysis, are in the 300 to 5000 millisecond range. The loops applicable to Fermi 2 for this TS change are:

	Reference 2 Table 6-2 Loop Type
Reactor Protection System	
reactor vessel water level-low, level 3	H
reactor vessel steam dome pressure high	H
Primary Containment Isolation Instrumentation, Main Steam Line Isolation	
reactor vessel water level-low low low, level 1	E*
main steam line flow-high	E**

* - Fermi design has an additional HFA relay in this loop. Based on the information provided in the NEDO-32291-A Supplement 1, Table C.2-1 "Component Sets and Component BRT's" the Loop Logic BRT for this loop will increase to 284 ms . This will decrease the loop sensor BRT to 716 ms . Fermi 2 tests the sensor to be within 400 ms which is well within the margin. Based on the above, Fermi 2 design is bounded by the BRT as calculated above using the NEDO-32291-A Supplement 1.

** - Fermi 2 design has an additional HFA relay in this loop. Based on the information provided in the NEDO-32291-A Supplement 1, Table C.2-1 "Component Sets and Component BRT's" the Loop Logic BRT for this loop will increase to 284 ms . This will decrease the loop sensor BRT to 216 ms . Fermi 2 tests the sensor to be within 110 ms which is well within the margin. Based on the above, Fermi 2 design is bounded by the BRT as calculated above using the NEDO-32291-A Supplement 1.

The following tables show Fermi 2 BRT calculation using Reference: NEDO-32291-A Supplement 1, Table C.2-1 "Component Sets and Component BRT's".

Loop Type H

reactor vessel water level-low, level 3

Sensor	Trip Unit (TU)	TU Output Relay	Logic Relay	Output Contactor	Loop Logic BRT	Channel BRT
429 ms	24 ms	140 ms	40 ms	45 ms	249 ms	.678 sec

reactor vessel steam dome pressure high

Sensor	Trip Unit (TU)	TU Output Relay	Logic Relay	Output Contactor	Loop Logic BRT	Channel BRT
200 ms	24 ms	140 ms	40 ms	45 ms	249 ms	.449 sec

Loop Type E* (* Additional Auxiliary Relay)

reactor vessel water level-low low low, level 1

Sensor	Trip Unit (TU)	TU Output Relay	Logic Relay	Auxiliary Relay	Output Relay	Loop Logic BRT	Channel BRT
400 ms	24 ms	140 ms	40 ms	40 ms	40 ms	284 ms	.684 sec

main steam line flow-high

Sensor	Trip Unit (TU)	TU Output Relay	Logic Relay	Auxiliary Relay	Output Relay	Loop Logic BRT	Channel BRT
110 ms	24 ms	140 ms	40 ms	40 ms	40 ms	284 ms	.394 sec

C. Available Margin

A BRT has been determined for each trip channel analyzed, and is compared to the current Response Time Testing Limit from the Technical Requirement Manual Tables 3.3.1.1-1 (RPS) and 3.3.6.1-1 (Primary Containment Isolation Instrumentation). The channel BRT is the sum of the sensor and Loop Logic BRTs. In each case the Technical Requirement Manual Limit exceeds the channel BRT:

Channel	Channel BRT (sec)	TRM Limit (sec)	Margin (ms ec)
reactor vessel water level-low, level 3	.678	≤ 1.05	+372
reactor vessel steam dome pressure high	.449	≤ 0.55	+101
reactor vessel water level-low low low, level 1	.684	≤ 1.0	+316
main steam line flow-high	.394	≤ 0.50	+106

D. Defense-in-Depth

References 2 and 4 demonstrate that any credible component failure among those analyzed would either be bounded by a limiting response time, or would be detected by other surveillances. The basis for elimination of this response time testing is the demonstration that the bounding response times are valid for the referenced channels. Detectability of component failures such that component and channel response times are affected is a credible expectation of other surveillance testing. This is a defense-in-depth feature, discussed in detail in references 2, 3, 4, and 5 that provides further assurance of proper operation and reliability of the affected trip channels. Applicable surveillance procedures contain language requiring technician cognizance and responsibility to observe and report sluggish component behavior.

E. Precedents

Two plants have requested similar amendments.

PPL Susquehanna, LLC, Docket No. 50-387, submitted their request on November 16, 2000 and received NRC approval March 12, 2001 (TAC Nos. MB0516 and MB0517). Susquehanna received relaxation of RTT for the same instruments listed in the Fermi 2 submittal. The sensors and types of relays for individual components differed between Fermi and Susquehanna. Susquehanna requested relaxation of sensor RTT for RPS steam dome pressure-high.

Southern Company's Edwin I. Hatch Nuclear Plant, Docket No. 50-366 submitted their request on May 21, 2001. The Hatch request differs from the Fermi 2 request in that it only requested elimination of RPS RTT for reactor vessel water level-low, level 3 and reactor vessel steam dome pressure high. This license amendment request is awaiting approval.

NRC-02-0036
ENCLOSURE 2

FERMI 2 NRC DOCKET NO. 50-341
OPERATING LICENSE NO. NPF-43

REQUEST TO RELAX RESPONSE TIME TESTING FOR REACTOR PROTECTIONS SYSTEM AND PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION TECHNICAL SPECIFICATIONS

10CFR50.92 SIGNIFICANT HAZARDS CONSIDERATION

10CFR50.92 SIGNIFICANT HAZARDS CONSIDERATION

In accordance with 10CFR50.92, Detroit Edison has made a determination that the proposed amendment involves no significant hazards consideration. The proposed Technical Specification (TS) changes described above do not involve a significant hazards consideration for the following reasons:

The proposed change eliminates certain response time testing (RTT) surveillance requirements from the Technical Specifications in accordance with the NRC approved methodology delineated in the BWROG Licensing Topical Report (LTR) NEDO 32291-A, "System Analyses for Elimination of Selected Response Time Testing Requirements," dated October 1995, and its Supplement 1, dated October, 1999.

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed amendment to the Technical Specifications does not result in the alteration of the design, material, or construction standards that were applicable prior to the change. The same Reactor Protection System (RPS) and Primary Containment Isolation Instrumentation instrumentation is used, and the response time assumptions in Updated Final Safety Analysis Report (UFSAR) Chapter 15 analysis remain unchanged. Only the methodology of time response verification is changed. The proposed change will not result in the modification of any system interface that would increase the likelihood of an accident since these events are independent of the proposed change. The proposed amendment will not change, degrade, or prevent actions, or alter any assumptions previously made in evaluating the radiological consequences of an accident described in the UFSAR. Therefore, the proposed amendment does not result in a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   This change does not alter the performance of the Reactor Protection System (RPS) or Primary Containment Isolation Instrumentation

systems. All RPS and Primary Containment Isolation Instrumentation channels will still have an initial response time verified by test before initially placing the channel in operational service and after any maintenance that could affect response time. Changing the method of periodically verifying instrument response for certain RPS and Primary Containment Isolation Instrumentation channels (assuring equipment operability) from time response testing to calibration and channel checks will not create any new accident initiators or scenarios. Periodic surveillance of these instruments will detect significant degradation in the channel characteristic. Implementation of the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No.

   Implementation of NEDO 32291-A methodologies for eliminating selected response time testing does not involve a significant reduction in the margin of safety. The current response time limits are based on the maximum values assumed in the plant safety analyses. The analyses conservatively establish the margin of safety. The elimination of the selected response time testing does not affect the capability of the associated systems to perform their intended function within the allowed response time used as the basis for plant safety analyses. Plant and system response to an initiating event will remain in compliance within the assumptions of the safety analyses, and therefore, the margin of safety is not affected. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Detroit Edison has determined that the proposed amendment presents no significant hazards consideration under the standards set forth in 10CFR50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

Enclosure 3 to
NRC-02-0036

NRC-02-0036
ENCLOSURE 3

FERMI 2 NRC DOCKET NO. 50-341
OPERATING LICENSE NO. NPF-43

REQUEST TO RELAX RESPONSE TIME TESTING FOR REACTOR PROTECTIONS SYSTEM AND PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION TECHNICAL SPECIFICATIONS

Attached is a mark-up of the existing TS indicating the proposed changes (Part 1) and a typed version incorporating the proposed changes (Part 2)

Enclosure 3 to
NRC-02-0036

NRC-02-0036
ENCLOSURE 3
PART 1

FERMI 2 NRC DOCKET NO. 50-341
OPERATING LICENSE NO. NPF-43

PROPOSED TS MARKED UP PAGES

INCLUDED PAGE(S):

3.3-7
3.3-9
3.3-53
3.3-54
3.3-55

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.3.1.1.17	----------NOTES---------- 1. Neutron detectors are excluded. ~~2. For Functions 3 and 4 channel sensor response times are not required to be measured.~~ DELETE ~~3.~~ 2. For Function 5 "n" equals 4 channels for the purpose of determining the STAGGERED TEST BASIS Frequency. REVISE ---------- Verify the RPS RESPONSE TIME is within limits.	18 months on a STAGGERED TEST BASIS
SR 3.3.1.1.18	----------NOTE---------- Neutron detectors are excluded. ---------- Perform CHANNEL CALIBRATION.	24 months
SR 3.3.1.1.19	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months
SR 3.3.1.1.20	Verify OPRM is not bypassed when APRM Simulated Thermal Power is ≥ 28% and recirculation drive flow is < 60% of rated recirculation drive flow.	24 months

Table 3.3.1.1-1 (page 2 of 3)
Reactor Protection System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2.	Average Power Range Monitors (continued)					
	c. Neutron Flux - Upscale	1	3(c)	F	SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.8 SR 3.3.1.1.12 SR 3.3.1.1.18	≤ 120% RTP
	d. Inop	1,2	3(c)	G	SR 3.3.1.1.12	NA
	e. 2-out-of-4 Voter	1,2	2	G	SR 3.3.1.1.2 SR 3.3.1.1.12 SR 3.3.1.1.17 SR 3.3.1.1.19	NA
	f. OPRM Upscale	≥ 25% RTP	3(c)	J	SR 3.3.1.1.2 SR 3.3.1.1.8 SR 3.3.1.1.12 SR 3.3.1.1.18 SR 3.3.1.1.20	NA
3.	Reactor Vessel Steam Dome Pressure-High	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ 1113 psig
4.	Reactor Vessel Water Level-Low, Level 3	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.14 SR 3.3.1.1.15	≥ 171.9 inches
5.	Main Steam Isolation Valve-Closure	1	8	F	SR 3.3.1.1.9 SR 3.3.1.1.14 SR 3.3.1.1.15 SR 3.3.1.1.17	≤ 12% closed
6.	Main Steam Line Radiation - High	1,2	2	H	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ 3.6 X full power background
7.	Drywell Pressure-High	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ 1.88 psig

(continued)

(c) Each APRM channel provides inputs to both trip systems.

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.6.1-1 to determine which SRs apply for each Primary Containment Isolation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to:

   a. 2 hours for Function 5.a when testing non-redundant circuitry that results in loss of isolation capability associated with this Function, provided Functions 5.b, 5.c, and 5.e are OPERABLE;

   b. 6 hours for Functions 1, 2, 5 (other than non-redundant circuitry of 5.a), and 6, provided the associated Function maintains isolation capability; and

   c. 8 hours for Functions 3 and 4, provided the associated Function maintains isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.6.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.1.3	Verify the trip unit setpoint.	92 days
SR 3.3.6.1.4	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.6.1.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 months
SR 3.3.6.1.6	Perform CHANNEL FUNCTIONAL TEST.	18 months

~~(continued)~~ DELETE

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.7	----------NOTES---------- 1. Radiation detectors may be excluded. 2. Channel sensor response times are not required to be measured. ----------	
	Verify the ISOLATION SYSTEM RESPONSE TIME is within limits.	18 months on a STAGGERED TEST BASIS

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Table 3.3.6.1-1 (page 1 of 4)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Main Steam Line Isolation					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1,2,3	2	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.5	≥ 24.8 inches
b. Main Steam Line Pressure – Low	1	2	E	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.5	≥ 736 psig
c. Main Steam Line Flow – High	1,2,3	2 per MSL	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ 118.4 psid
d. Condenser Pressure – High	1, 2(a), 3(a)	2	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ 7.05 psia
e. Main Steam Tunnel Temperature – High	1,2,3	2 per trip string	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ 206°F
f. Main Steam Line Radiation – High	1,2,3	2	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ 3.6 x full power background
g. Turbine Building Area Temperature – High	1,2,3	4	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ 206°F
h. Manual Initiation	1,2,3	1 per valve	G	SR 3.3.6.1.6	NA

(continued)

(a) Except when bypassed during reactor shutdown or for reactor startup under administrative control.

NRC-02-0036
ENCLOSURE 3
PART 2

FERMI 2 NRC DOCKET NO. 50-341
OPERATING LICENSE NO. NPF-43

PROPOSED TS MARKED UP PAGES

INCLUDED PAGE(S):

3.3-7
3.3-9
3.3-53
3.3-54
3.3-55

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.17	----------NOTES---------- 1. Neutron detectors are excluded. 2. For Function 5 "n" equals 4 channels for the purpose of determining the STAGGERED TEST BASIS Frequency. ---------- Verify the RPS RESPONSE TIME is within limits.	18 months on a STAGGERED TEST BASIS
SR 3.3.1.1.18	----------NOTE---------- Neutron detectors are excluded. ---------- Perform CHANNEL CALIBRATION.	24 months
SR 3.3.1.1.19	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months
SR 3.3.1.1.20	Verify OPRM is not bypassed when APRM Simulated Thermal Power is $\geq$ 28% and recirculation drive flow is < 60% of rated recirculation drive flow.	24 months

Table 3.3.1.1-1 (page 2 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. Average Power Range Monitors (continued)					
c. Neutron Flux - Upscale	1	3(c)	F	SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.8 SR 3.3.1.1.12 SR 3.3.1.1.18	≤ 120% RTP
d. Inop	1,2	3(c)	G	SR 3.3.1.1.12	NA
e. 2-out-of-4 Voter	1,2	2	G	SR 3.3.1.1.2 SR 3.3.1.1.12 SR 3.3.1.1.17 SR 3.3.1.1.19	NA
f. OPRM Upscale	≥ 25% RTP	3(c)	J	SR 3.3.1.1.2 SR 3.3.1.1.8 SR 3.3.1.1.12 SR 3.3.1.1.18 SR 3.3.1.1.20	NA
3. Reactor Vessel Steam Dome Pressure-High	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 ~~SR 3.3.1.1.14~~ SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	≤ 1113 psig
4. Reactor Vessel Water Level-Low, Level 3	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 ~~SR 3.3.1.1.14~~ SR 3.3.1.1.15 ~~SR 3.3.1.1.17~~	≥ 171.9 inches
5. Main Steam Isolation Valve-Closure	1	8	F	SR 3.3.1.1.9 SR 3.3.1.1.14 SR 3.3.1.1.15 SR 3.3.1.1.17	≤ 12% closed
6. Main Steam Line Radiation - High	1,2	2	H	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ 3.6 X full power background
7. Drywell Pressure-High	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.9 SR 3.3.1.1.10 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ 1.88 psig

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DELETE

(continued)

(c) Each APRM channel provides inputs to both trip systems.

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.6.1-1 to determine which SRs apply for each Primary Containment Isolation Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to:

   a. 2 hours for Function 5.a when testing non-redundant circuitry that results in loss of isolation capability associated with this Function, provided Functions 5.b, 5.c, and 5.e are OPERABLE;

   b. 6 hours for Functions 1, 2, 5 (other than non-redundant circuitry of 5.a), and 6, provided the associated Function maintains isolation capability; and

   c. 8 hours for Functions 3 and 4, provided the associated Function maintains isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.6.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.1.3	Verify the trip unit setpoint.	92 days
SR 3.3.6.1.4	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.6.1.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 months
SR 3.3.6.1.6	Perform CHANNEL FUNCTIONAL TEST.	18 months

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Table 3.3.6.1-1 (page 1 of 4)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Main Steam Line Isolation					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1,2,3	2	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 ~~SR 3.3.6.1.4~~ SR 3.3.6.1.5 ~~SR 3.3.6.1.7~~ DELETE	≥ 24.8 inches
b. Main Steam Line Pressure – Low	1	2	E	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.5	≥ 736 psig
c. Main Steam Line Flow – High	1,2,3	2 per MSL	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 ~~SR 3.3.6.1.4~~ SR 3.3.6.1.5 ~~SR 3.3.6.1.7~~ DELETE	≤ 118.4 psid
d. Condenser Pressure – High	1, 2(a), 3(a)	2	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ 7.05 psia
e. Main Steam Tunnel Temperature – High	1,2,3	2 per trip string	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ 206°F
f. Main Steam Line Radiation – High	1,2,3	2	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ 3.6 x full power background
g. Turbine Building Area Temperature – High	1,2,3	4	D	SR 3.3.6.1.1 SR 3.3.6.1.2 SR 3.3.6.1.3 SR 3.3.6.1.4 SR 3.3.6.1.5	≤ 206°F
h. Manual Initiation	1,2,3	1 per valve	G	SR 3.3.6.1.6	NA

(continued)

(a) Except when bypassed during reactor shutdown or for reactor startup under administrative control.

NRC-02-0036
ENCLOSURE 4

FERMI 2 NRC DOCKET NO. 50-341
OPERATING LICENSE NO. NPF-43

REQUEST TO RELAX RESPONSE TIME TESTING FOR REACTOR PROTECTIONS SYSTEM AND PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION TECHNICAL SPECIFICATIONS

RESPONSE TO THE CONDITIONS INCLUDED IN THE NRC STAFF'S SAFETY EVALUATION ACCEPTING NEDO-32291-A SUPPLEMENT 1

RESPONSE TO THE CONDITIONS INCLUDED IN THE NRC STAFF'S SAFETY EVALUATION ACCEPTING NEDO-32291-A SUPPLEMENT 1

1. **Confirm the applicability of the generic analysis of Supplement 1 to NEDO-32291-A to their plant;**

   NEDO-32291-A Supplement 1 is applicable to Fermi 2. Fermi participated in the development of NEDO-32291-A Supplement 1 as documented in Appendix A of the NEDO document.

2. **For Agastat Relays if the following requirements are met, no credible failure will increase response time to more than 140 ms without being detected by tests other than RTT**:

   a. **Before installation, or after any maintenance or repair of the relays, the normally open contacts of the relays are confirmed to open in 70 ms or less after power is removed from the coil.**

      The calibration procedures will be revised to include a step requiring response time test to be performed, prior to return of the relay to service when repairing or replacing the relay. The normally open contacts of the relays will be confirmed to open in 70 ms or less after power is removed from the coil. The test is required "prior to return to service" rather than "prior to installation" since it is acceptable to perform response time testing on the bench or installed.

   b. **The relays are within their qualified life.**

      Relays have been verified to be within their qualified life.

   c. **The relays are procured by the utility as "nuclear safety related", or are dedicated for nuclear-safety-related application under a utility dedication program.**

      The relays are procured as "nuclear-safety-related".

3. **For GE HFA Relays if the following requirements are met, no credible failure will increase response time to more than 40 ms without being detected by tests other than RTT.**

   a. These relays must be used as normally open energized in the untripped state, with power removed and contacts closed to trip.

These relays are used as normally open energized in the untripped state, with power removed and contacts closed to trip.

b. **The HFA manufacturer's instructions are followed for setup and adjustment of the relay before initial operation and after any repair or maintenance.**

The manufacturer's instructions for setup and adjustment of the relay will be proceduralized in the calibration procedures. These procedure will be performed for relays before intial operation and after any repair or maintenance.

c. **Before installation, or after any maintenance or repair of the relays, the normally open contacts of the relays are confirmed to open in 20 ms or less after power is removed from the coil.**

The normally open contacts of the relays will be confirmed to open in 20 ms or less after power is removed from the coil. The calibration procedure will be revised to include this verification, before installation or after maintenance or repair of the relays.

d. **The relays are procured by the utility as "nuclear safety related", or are dedicated for nuclear-safety-related application under a utility dedication program.**

The relays are procured as "nuclear-safety-related".

4. **For Scram Contactors if the following requirements are met, no credible failure will increase response time to more than 45 ms without being detected by tests other than RTT**

a. **One GE CR105, GE CR205, or GE CR305 magnetic contactor directly operates a set of Scram Pilot Solenoid Valves.**

These contactors have been confirmed to directly operate a set of Scram Pilot Solenoids Valves.

A combined response is used for b and c

b. **Verify that the RPS scram contactor components are tested as a part of the APRM upscale trip RTT.**

c **Determine that one of the two postulated test methods are used.**

Each Fermi 2 scram contactor and one interposing relay, not shared by other loops, are response time tested with an acceptance criteria of less than or equal to 50 ms for RPS function Average Power Range Monitor (APRM) Two-Out-Of-Four Voter. Hence, 45 ms is used as the scram contactor BRT in the analysis as identified by NEDO-3229-1, Supplement 1, Section B.7.2.2.

d. **Use the appropriate BRT for the test method used.**

A BRT of 45 ms is to be used.

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ENCLOSURE 5

FERMI 2 NRC DOCKET NO. 50-341
OPERATING LICENSE NO. NPF-43

REQUEST TO RELAX RESPONSE TIME TESTING FOR REACTOR PROTECTIONS SYSTEM AND PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION TECHNICAL SPECIFICATIONS

LIST OF REGULATORY COMMITMENTS

LIST OF REGULATORY COMMITMENTS

The following table identifies those actions committed to by Detroit Edison in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments. Please direct questions regarding these commitments to Norman K. Peterson at extension (734) 586-4258.

These commitments apply only to the trip units and relays covered by these proposed Technical Specification changes.

1. For Agastat relays:

   a. Before installation, or after any maintenance or repair of the relays, the normally open contacts of the relays are confirmed to open in 70 ms or less after power is removed from the coil.

      The calibration procedures will be revised to include a step requiring response time test to be performed, prior to return of the relay to service when repairing or replacing the relay. The normally open contacts of the relays will be confirmed to open in 70 ms or less after power is removed from the coil. The test is required "prior to return to service" rather than "prior to installation" since it is acceptable to perform response time testing on the bench or installed.

2. For GE HFA relays:

   a. The HFA manufacturer's instructions are followed for setup and adjustment of the relay before initial operation and after any repair or maintenance.

      The manufacturer's instructions for setup and adjustment of the relay will be proceduralized in the calibration procedures. These procedure will be performed for relays before intial operation and after any repair or maintenance.

   b. Before installation, or after any maintenance or repair of the relays, the normally open contacts of the relays are confirmed to open in 20 ms or less after power is removed from the coil.

The normally open contacts of the relays will be confirmed to open in 20 ms or less after power is removed from the coil, proceduralized in the calibration procedures, before installation or after maintenance or repair of the relay.

Enclosure 6 to
NRC-02-0036

NRC-02-0036
ENCLOSURE 6

FERMI 2 NRC DOCKET NO. 50-341
OPERATING LICENSE NO. NPF-43

REQUEST TO RELAX RESPONSE TIME TESTING FOR REACTOR PROTECTIONS SYSTEM AND PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION TECHNICAL SPECIFICATIONS

(FOR INFORMATION ONLY)

PROPOSED TS BASES MARKED UP PAGES

INCLUDED PAGE(S):

B 3.3.1.1-33
B 3.3.1.1-35
B 3.3.6.1-31
B 3.3.6.1-32

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.1.17

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. This test may be performed in one measurement or in overlapping segments, with verification that all components are tested. The RPS RESPONSE TIME acceptance criteria are included in Reference 10. RPS RESPONSE TIME for the APRM 2-out-of-4 Voter Function includes the output relays of the voter and the associated RPS relays and contactors. (The digital portion of the APRM and 2-out-of-4 voter channels are excluded from the RPS RESPONSE TIME testing because self-testing and calibration checks the time base of the digital electronics.) Confirmation of the time base is adequate to assure required response times are met.

As noted, neutron detectors are excluded from RPS RESPONSE TIME testing because the ~~principles of detector operation~~ virtually ensure ~~an in~~stantaneous response time. and relays/ logic components

~~In addition, Note 2 states the response time of the sensors for Functions 3 and 4 are excluded from RPS RESPONSE TIME testing.~~ The sensors for ~~these~~ Functions are assumed to operate at the ~~censor's~~ design response time. This allowance is supported by Reference 12, which determined that significant degradation of the ~~sensor~~ channel response time can be detected during performance of other Technical Specification SRs, ~~and that the sensor response time is a small part of the overall RPS RESPONSE TIME testing.~~ 3 and 4 < and 21, REVISE

RPS RESPONSE TIME tests are conducted on an 18 month STAGGERED TEST BASIS. Note 2 requires STAGGERED TEST BASIS Frequency to be determined based on 4 channels per trip system, in lieu of the 8 channels specified in Table 3.3.1.1-1 for the MSIV Closure Function. This Frequency is based on the logic interrelationships of the various channels required to produce an RPS scram signal. The 18 month Frequency is consistent with the typical industry refueling cycle and is based upon plant operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences.

BASES

REFERENCES (continued)

14. NEDO-31960-A, "BWR Owners' Group Long-Term Stability Solutions Licensing Methodology," November 1995.

15. NEDO-31960-A, Supplement 1, "BWR Owners' Group Long-Term Stability Solutions Licensing Methodology," November 1995.

16. NEDO-32465-A, "Reactor Stability Detect and Suppress Solutions Licensing Basis Methodology for Reload Applications," August 1996.

17. NEDC-32410P-A, Supplement 1, "Nuclear Measurement Analysis and Control Power Range Neutron Monitor (NUMAC PRNM) Retrofit Plus Option III Stability Trip Function," November 1997.

18. Letter, L. A. England (BWROG) to M. J. Virgilio, "BWR Owners' Group Guidelines for Stability Interim Corrective Action," June 6, 1994.

19. NRC Generic Letter 94-02, "Long-Term Solutions and Upgrade of Interim Operating Recommendations for Thermal Hydraulic Instabilities in Boiling Water Reactors," July 1994.

20. BWROG Letter 96113, Kevin P. Donovan (BWROG) to L. E. Phillips (NRC), "Guidelines for Stability Option III 'Enable Region' (TAC M92882)," dated September 17, 1996.

21. NEDO-32291-A Supplement 1, "System Analysis for the Elimination of Selected Response Time Testing Requirements," dated October, 1999.

ADD

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.6.1.5

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required isolation logic for a specific channel. The system functional testing performed on PCIVs in LCO 3.6.1.3 overlaps this Surveillance to provide complete testing of the assumed safety function. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

DELETE

SR 3.3.6.1.7

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. The instrument response times must be added to the PCIV closure times to obtain the ISOLATION SYSTEM RESPONSE TIME.

ISOLATION SYSTEM RESPONSE TIME acceptance criteria for the instrumentation portion are included in Reference 7, while the acceptance criteria for the PCIV closure times are included in Reference 8. This test may be performed in one measurement, or in overlapping segments, with verification that all components are tested.

A Note to the Surveillance states that the radiation detectors may be excluded from ISOLATION SYSTEM RESPONSE TIME testing. This Note is necessary because of the difficulty of generating an appropriate detector input signal and because the principles of detector operation virtually ensure an instantaneous response time. Response times for radiation detector channels shall be measured from detector output or the input of the first electronic component in the channel.

In addition, Note 2 states the response time of the sensors are excluded from the ISOLATION SYSTEM RESPONSE TIME testing. The sensors for the tested Functions are assumed to operate at the sensor's design response time. This allowance is supported by Reference 10 which determined that significant degradation of the sensor channel response time can be detected during performance of other Technical

BASES

SURVEILLANCE REQUIREMENTS (continued)

Specification SRs and that the sensor response time is a small part of the overall response time testing.

ISOLATION SYSTEM RESPONSE TIME tests are conducted on an 18 month STAGGERED TEST BASIS. The 18 month Frequency is consistent with the typical industry refueling cycle and is based upon plant operating experience that shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences.

DELETE

REFERENCES

1. UFSAR, Section 6.3.
2. UFSAR, Chapter 15.
3. NEDO-31466, "Technical Specification Screening Criteria Application and Risk Assessment," November 1987.
4. UFSAR, Section 4.5.2.4.
5. NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," July 1990.
6. NEDC-30851P-A Supplement 2, "Technical Specifications Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," March 1989.
7. UFSAR, Section 7.3.
8. UFSAR, Section 6.2.
9. NEDO-31400, "Safety Evaluation for Eliminating the BWR MSIV Closure Function and Scram Function of the MSL Radiation Monitor," Licensing Topical Plant Report for BWROG.
10. NEDO-32291, "System Analysis for Elimination of Selected Response Time Testing Requirements," January 1994; and Fermi-2 SER for Amendment 111, dated April 18, 1997.

DELETE