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Nuclear Operations

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NRC [illegible]185

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

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

2) Detroit Edison letter to NRC, "Proposed Technical Specification (License Amendment) Change - Applicability (3/4.0)," NRC-88-0062, dated May 24, 1988

Subject: Additional Information Concerning Proposed Change to Technical Specification 3.0.4

Attached please find additional information concerning a proposed change to Technical Specification 3.0.4 submitted in Reference 2. Reference 2 proposed changes to Specifications 3.0.4, 4.0.3 and 4.0.4 in accordance with NRC staff guidance provided in Generic Letter 87-09, dated June 4, 1987. Fermi 2 Operating License Amendment No. 31 of March 9, 1989 approved the proposed changes to Specifications 4.0.3 and 4.0.4. This letter addresses the remaining change to Specification 3.0.4 and changes to specifications which no longer require specific exemptions from the provisions of Specification 3.0.4. Based on this supporting information and the Reference 2 submittal, Detroit Edison requests approval of these proposed changes.

The additional information provided herein addresses two general concerns expressed by the NRC staff when reviewing Specification 3.0.4-related changes under Generic Letter 87-09. The first concern is that the remedial measures prescribed by Technical Specification Action Statements must provide a sufficient level of protection to permit Operational Condition changes and safe long-term operation where formerly such Operational Condition changes would have been prohibited by Specification 3.0.4. The second concern is that routine use of the flexibility offered by the new Specification 3.0.4 would lead to a reduced level of maintenance of important plant equipment. This letter provides a description of the evaluations performed and controls to be put in place to resolve these concerns.

Detroit Edison has reviewed the Reference 2 evaluations which concluded that the proposed change involves no significant hazards

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considerations. This review has determined that the Reference 2 evaluation remains valid in light of the attached additional information.

If you have any questions, please contact Mr. Glen D. Ohlemacher at (313) 586-4275.

Sincerely,

Enclosure

cc: A. D. Davis
R. W. DeFayette
W. G. Rogers
J. F. Stang
Supervisor, Electric Operators,
Michigan Public Service Commission

I, WILLIAM S. ORSER, 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.

William S. Orser

WILLIAM S. ORSER
Senior Vice President

On this 27th day of February, 1991, before me personally appeared William S. Orser, being first duly sworn and says that he executed the foregoing as his free act and deed.

Nicalie A. Armetta

Notary Public

NICALIE A. ARMETTA
Notary Public, Monroe County, MI
My Commission Expires Jan. 11, 1992

Introduction

Detroit Edison, in Reference 2, requested changes to Technical Specifications (TS) 3.0.4, 4.0.3 and 4.0.4 in accordance with NRC Generic Letter (GL) 87-09 of June 4, 1987. Fermi 2 Operating License Amendment No. 31 granted the proposed changes to TS 4.0.3 and 4.0.4. This letter addresses the remaining proposed change to TS 3.0.4.

TS 3.0.4 prohibits entry into Operational Conditions or other specified conditions while relying on the provisions of Action statements. Exemptions to TS 3.0.4 are provided in individual specifications based on historical precedent. Inconsistent application of these exemptions impacts plant operation in that it delays startup or return to power operation by prohibiting entry into an Operational Condition or other specified condition when the Action requirements establish an acceptable level of safety for unlimited continued operation.

To resolve this problem, GL 87-09 proposed to revise TS 3.0.4 to apply the restriction against entry into an Operation Condition or other specified condition only when the Limiting Condition for Operation (LCO) is not met and the Action requirements do not allow unlimited continued operation.

Many TSs allow remedial actions (i.e., other than restoring the inoperable component to operable status) when an LCO cannot be met, so that shutdown can be avoided. In those cases where the remedial action is not a significant degradation from the level of protection required by the LCO (for example, effluent grab sampling when an effluent monitor is inoperable), or when the remedial action affords greater protection than the LCO (such as isolation of a containment penetration when one of its isolation valves is inoperable), an unlimited period of time is provided during which the LCO can be met by the alternate means. Most of these TS currently contain exemptions to the provisions of TS 3.0.4 so that Operational Condition changes are not unnecessarily impeded when operation can safely continue. The proposed change will apply this philosophy universally rather than on a case-by-case basis.

The additional information provided herein addresses two general concerns expressed by the NRC staff when reviewing Specification 3.0.4-related changes under Generic Letter 87-09. The first concern is that the remedial measures prescribed by Technical Specification Action Statements must provide a sufficient level of protection to permit operational condition changes and safe long-term operation where formerly such operational condition changes would have been prohibited by Specification 3.0.4. The second concern is that routine use of the flexibility offered by the new Specification 3.0.4 would lead to a reduced level of maintenance of important plant equipment.

This letter provides a description of the evaluations performed and controls to be put in place to resolve these concerns.

In addition, the proposed TS change pages from Reference 2 have been updated to reflect recent License Amendments and proposals. Also, further information concerning changes to the TS Bases section proposed in Reference 2 is provided.

Level of Protection Provided by Action Statements

The NRC staff position of GL 87-09 in regards to TS 3.0.4 states:

> "For an LCO that has Action requirements permitting continued operation for an unlimited period of time, entry into an operational mode or other specified condition of operation should be permitted in accordance with those Action Requirements. This is consistent with NRC's regulatory requirements for an LCO."

This position and the revision to TS 3.0.4 proposed by GL 87-09 are based in part on the premise that an Action requirement that allows continued operation for an unlimited period of time provides an acceptably safe alternative means of meeting the LCO requirement. Detroit Edison has reviewed those TS for which the proposed change to TS 3.0.4 will allow continued operation when entry into an Operational Condition or other specified condition previously would have been prohibited. This review resulted in four categories of changes. Some Action Requirements in whole or in part meet the criteria for more than one category and are listed under each category met. These categories are:

1. Actions that require the intended safety function of the system or component be positively performed.

   A number of Action requirements provide an equal or greater level of safety than the LCO itself. That is, the Action requires the intended safety function of the system or component be positively performed. Some examples of these Action requirements are:

   - With inoperable isolation valves, the Action requirement is to isolate the affected penetration.

   - With two or more inoperable instruments which function to initiate a reactor scram when trip setpoints are reached, the Action requirements are to verify that all control rods are inserted and in some cases to lock the reactor mode switch in the Shutdown position and/or to suspend all operations involving Core Alterations.

- With an inoperable instrument channel whose function is to provide a trip signal, the Action requirement is to place that channel in the tripped condition.

Because these Action requirements are either more restrictive than the LCO or require that the safety function provided by the LCO be positively performed, they provide an acceptably safe alternative means of meeting the LCO requirement. These Action requirements are listed below:

3.1.4.3 Rod Block Monitor
Action a
Action b

3.3.1 Reactor Protection System Instrumentation.
Action b item 1 (modes 3, 4, 5)
item 2.a (modes 3, 5)
item 2.d (modes 3, 5)
item 8 (mode 5)
item 11 (modes 3, 4, 5)
item 12 (modes 3, 4, 5)

3.3.2 Isolation Actuation Instrumentation
Action c item 1.h
item 2
item 3
item 4
item 5
item 6

3.3.3 Emergency Core Cooling Isolation Actuation.
Action b item 1 a-c
items 2 a-g
items 3 a-e
items 4 a, b

3.3.4 ATWS Recirculation Pump Trip Instrumentation
Action b
Action c.1

3.3.5 Reactor Core Isolation Cooling Actuation Instrumentation.
Action b items a, b

3.3.6 Control Rod Block Instrumentation
Action b items 2-7

3.3.8 Turbine Overspeed Protection System *
Action a
Action b

3.3.9 Feedwater/Main Turbine Trip System Actuation Instrumentation
Action a

3.4.3.2 Operational Leakage
Action c

3.6.1.8 Drywell and Suppression Chamber Purge System
Action a

3.6.3 Primary Containment Isolation Valves
Action a

3.6.5.2 Secondary Containment Automatic Isolation Dampers.
Action b
Action c

3.7.2 Control Center Emergency Filtration System
Action c.1**

3.8.4.3 Motor-operated Valve Thermal Overload Protection.

3.8.4.5 Standby Liquid Control System Associated Isolation Devices.
Action b

2. Action requirements that define inoperability.

A number of Action requirements define inoperability, either of the system or component for which the LCO is written or for a system or component which is supported by the LCO. Some examples of these Action requirements are:

- When an instrumentation channel trip setpoint is less conservative than the allowed value, the Action requirement is to declare that instrumentation channel inoperable.

- With inoperable actuation instrumentation, the Action requirement is to declare the associated system inoperable.

These Action requirements have the effect of defining inoperability of a system or component and then transferring the action to another Action requirement or to another LCO.

* TS proposed to be deleted in NRC-90-0079 of August 17, 1990.
** Action C.1(a) as proposed in NRC-90-0150 of September 11, 1990.

These Action requirements do not allow a reduction in safety, but rather define a system or component's status in relation to the LCO. As such, these Action requirements provide an acceptably safe alternative means of meeting the LCO requirement. These Action requirements are listed below:

3.3.2 Isolation Actuation Instrumentation
Action a
Action c Item 1.h
Item 2
Item 3
Item 4
Item 5

3.3.3 Emergency Core Cooling Actuation Instrumentation
Action a
Action b (all items except 3.e)

3.3.4 ATWS Recirculation Pump Trip Instrumentation
Action a
Action c

3.3.5 Reactor Core Isolation Cooling System Actuation Instrumentation
Action a
Action b

3.3.6 Control Rod Block Instrumentation
Action a
Action b Item 1

3.3.7.5 Accident Monitoring Instrumentation
Action Item 16

3.3.9 Feedwater/Main Turbine Trip System Actuation Instrumentation
Action a

3.4.1.3 Recirculation Pumps
Action b

3.5.1 Emergency Core Cooling Systems - Operating
Action e

3.6.4.1 Suppression Chamber - Drywell Vacuum Breakers
Action d

3.7.1.1 Residual Heat Removal Service Water System
Action b
Action c

3.7.1.2 Emergency Equipment Cooling Water *
Action b

3.7.1.3 Emergency Equipment Service Water *

3.7.1.4 Diesel Generator Cooling Water System

3.7.1.5 Ultimate Heat Sink
Action a
Action b
Action d
Action e.2
Action e.3

3.7.2 Control Room Emergency Filtration System
Action c.1 (b)**

3.7.5 Snubbers

3.7.9 Main Turbine Bypass and Moisture Separator Reheater

3.8.3.1 On-site Power Distribution System - Operating
Action c

3.8.3.2 Distribution - Shutdown
Action c

3.8.4.3 Motor-operated Valve Thermal Overload Protection
Action

3.8.4.5 Standby Liquid Control System Associated Isolation Devices
Action b

3. Action requirements that provide an alternate method of demonstrating operability.

A number of Action requirements provide an alternate method of demonstrating operability. These Action requirements are generally in response to the unavailability of automatic monitoring instrumentation. These Action requirements do not address the inoperability of the system or component specified by the LCO, but rather the ability to determine the operability of the system or component. These Action requirements provide an acceptable alternative for determining the operability of the system or component, and so provide an acceptably safe alternative means of meeting the LCO requirements. These Action requirements are listed below:

* As proposed in NRC-89-0242 of January 3, 1990.
** As proposed in NRC-90-0150 of September 11, 1990.

3.1.4.2 Rod Sequence Control System *
Action b

3.3.7.5 Accident Monitoring Instrumentation
Action items 12, 13

3.5.1 Emergency Core Cooling Systems - Operating
Action e
Action f

3.6.2.1 Suppression Chamber
Action c
Action e

3.6.4.1 Suppression Chamber - Drywell Vacuum Breakers
Action c

3.6.4.2 Reactor Building - Suppression Chamber Vacuum Breakers
Action c **

4. Other Action requirements.

Other Action requirements are not readily categorized and so are discussed separately. These discussions follow.

(a) TS 3.1.1 Shutdown Margin
Action b
Action c

Shutdown Margin is the amount of reactivity by which the reactor is subcritical assuming all control rods are fully inserted except for the single control rod of maximum reactivity worth. This maximum reactivity worth control rod is assumed to be fully withdrawn with the reactor cold ($68^{\circ}F$) and Xenon free. Shutdown margin is assumed as an initial condition for the Control Rod Removal Error During Refueling and the Fuel Assembly Insertion Error During Refueling accidents. In addition, the Control Rod Drop Accident analysis assumes that the core is subcritical with the highest worth control rod withdrawn.

The requirements of Action b for Operational Conditions 3 or 4 are essentially the same as those of Action c for Operational Condition 5. Compliance with either action statement eliminates the conditions during which the Control Rod Removal Error, Fuel Assembly Insertion error and Control Rod Drop accidents can occur. In addition to eliminating the conditions during which these accidents can occur, both Actions b and c require that secondary containment integrity be established.

* TS 3.1.4.2 proposed to be deleted by NRC-90-0039 of May 18, 1990.
** Action d as proposed in NRC-89-0273 of January 26, 1990.

Operational Condition 4 is differentiated from Operational Condition 5 by whether or not the reactor vessel head is tensioned. Operational Condition 3 is entered from Operational Condition 4 as a result of reactor coolant/moderator heating. The performance of these activities do not reduce the shutdown margin and do not reduce the level of safety provided by the Action requirements. Therefore, the flexibility provided by the proposed change to Specification 3.0.4 does not result in a reduction in the level of safety provided by the current requirements.

(b) TS 3.3.7.6 Source Range Monitors
Action b

Specification 3.3.7.6 provides requirements for Source Range Monitors (SRMs) to ensure that the operator is provided adequate information concerning the status of neutron level in the core at very low power levels during startup and shutdown operations. In Operational Condition 3 and 4, if the SRM requirements are not met then Action b precludes the plant operations of concern by verifying all control rods are inserted in the core and locking the reactor mode switch in the shutdown position. Entering an Operational Condition while relying on the provisions of action b is not a safety concern since the action b provisions assure that the SRM function will not be necessary. Therefore, the flexibility provided by the proposed Specification 3.0.4 does not result in a reduction in safety.

(c) TS 3.4.3.2 Operational Leakage
Action e

These operational leakage limits ensure that leaks are identified and corrective actions are performed before the leaks become significant. Requirements to address concerns in regards to service sensitive reactor coolant system Type 304 and 316 austenitic stainless steel are provided by Action e. With Action e satisfied, the source of the leakage has been identified as not being service sensitive Type 304 or 316 stainless steel, and the leakage limit of Action e is not applicable. Therefore, compliance with Action e of this specification provides an acceptably safe alternative for meeting the LCO, and the new flexibility allowed by the proposed change to Specification 3.0.4 does not result in a reduction in the level of safety.

(d) TS 3.4.4 Chemistry
Action c

The water chemistry limits of the reactor coolant system are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. Conductivity and pH are monitored since changes in these parameters are an indication of abnormal conditions. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present, so a much higher chloride concentration is allowed. Action c of this specification provides requirements for periods when the plant is not in Operational Conditions 1, 2 or 3. With the chloride concentration exceeding the limits for more than 24 hours or with conductivity or pH exceeding the limit for more than 72 hours, this Action requires a determination that the structural integrity of the reactor coolant system remains acceptable prior to entering Operational Condition 3.

Operational Condition 4 is differentiated from Operational Condition 5 by whether or not the reactor vessel head tensioned. The tension of the vessel head has no effect on reactor coolant conditions. The temperatures associated with Operational Condition 3 are not permitted in Operational Conditions 4 or 5. Therefore, changing Operational Conditions when not in Operational Condition 1, 2 or 3 does not result in the coolant conditions of concern for stress corrosion cracking. As such, the new flexibility provided by the proposed Specification 3.0.4 does not result in a reduction in safety.

(e) TS 3.4.5 Specific Activity
Action b

Specification 3.4.5 provides limits on primary coolant specific activity. The limits ensure that the doses resulting from a main steam line failure outside the containment during steady state operation will not exceed a small fraction of the 10CFR100 dose guidelines. Action a precludes the event of concern by requiring the main steam lines to be closed when appropriate. Action b provides for enhanced monitoring of primary coolant activity whenever the activity limits are not met.

The enhanced flexibility of the proposed Specification 3.0.4 allows entry into Operational Condition 4 while under the provisions of Action b. Such entry acts to reduce the possibility of any release of activity by reducing the stored energy of the reactor coolant system. Entry from Operational Condition 5 to 4 will not cause a safety concern since tensioning the head has no effect on the probability or consequences of a main steamline

break. In addition, the requirements of Action a preclude any safety concern. Therefore, the new flexibility does not result in a reduction in safety.

(f) TS 3.4.9.2 Residual Heat Removal - Cold Shutdown
Action a
Action b
Action c

This specification ensures long term cooling and reactor coolant temperature monitoring in Operational Condition 4.

Operational Condition 4 is entered from Operational Condition 5 by tensioning the reactor vessel head. Specification 3.9.11.2 provides essentially the same Action requirements in Operational Condition 5 as Specification 3.4.9.2 in Operational Condition 4. These similar Action requirements are transferred from Specification 3.9.11.2 to 3.4.9.2 by the tensioning of the reactor vessel head. Tensioning of the reactor vessel head has no effect on decay heat generation or removal or the ability to monitor reactor coolant temperature. Therefore, the new flexibility provided by the proposed change to Specification 3.0.4 is acceptable and does not involve a reduction in the level of safety.

Operational Condition 4 can also be entered from Operational Condition 3 by depressurizing and cooling the reactor coolant system. Specification 3.4.9.1 provides the corresponding requirements for residual heat removal in Operational Condition 3. An additional requirement exists in Operational Condition 4 to maintain greater than 214 inches reactor vessel water level. The remaining requirements for Shutdown Cooling Mode loop operability and forced circulation are the same.

If Operational Condition 4 is to be entered with the Shutdown Cooling Mode operability or the forced circulation requirements not met then the change is a transfer of the same action requirements between specifications. In addition, TS 3.4.9.1 action a will require this transition within 24 hours.

If Operational Condition 4 is to be entered with the vessel level requirement not met then the TS 3.4.9.2 action is to place in operation a second means of forced circulation. The vessel level requirement provides assurance that the core internals do not block a natural circulation core flow path. This is not of concern in Operational Condition 3 since steam production is assumed in Operation Condition 3. The natural circulation path acts as a mitigating factor if forced circulation were to be lost. The action to provide an operating second means of forced circulation provides adequate assurance that core circulation will be maintained. In addition,

entering Operational Condition 4 in these circumstances allows the reactor to be placed in a more stable temperature/pressure condition.

Therefore, as discussed above, the new flexibility provided by the proposed Specification 3.0.4 to enter Operational Condition 4 from Operational Condition 3 is acceptable and does not involve a reduction in the level of safety.

(g) TS 3.5.1 Emergency Core Cooling Systems - Operating
Action g

This Action requirement is administrative in nature in that it is not in response to the inoperability of an ECCS system, but rather the actuation and injecting into the reactor coolant system of an ECCS system. Compliance with this Action requirement does not involve a reduction in the level of safety and does not imply inoperability or a failure to meet the LCO. Therefore, the new flexibility created by the proposed TS 3.0.4 does not involve a reduction in safety.

(h) TS 3.5.2 Emergency Core Cooling Systems - Shutdown
Action a
Action b

The CS and LPCI systems are required to be available to provide reactor vessel inventory makeup in an event that results in inadvertent draining of the reactor vessel when irradiated fuel is in the vessel. At least two water injection ECCS subsystems are required operable by this specification during Operational Conditions 4 and 5* (the * provision allows all the specified ECCS systems to be inoperable under certain conditions). Actions a and b of this specification provide the requirements that must be met if the required ECCS is inoperable and ensures that the probability of an event occurring which would require water injection is minimized by suspending all operations with the potential for draining the reactor vessel.

The proposed change to Specification 3.0.4 will allow mode changes between Operational Conditions 4 and 5* due to tensioning or detensioning of the reactor vessel head while the required ECCS is inoperable. The tensioning of the reactor vessel head has no effect on ECCS makeup requirements and therefore does not involve a reduction in safety. The proposed change to Specification 3.0.4 will also allow entering Operational Condition 5* by exiting the * provisions while complying with the provisions of Actions a or b. Again, the provisions of Actions a or b ensure that the probability of an event occurring which would require water injection requirements is minimized and so compliance with this Action requirement does not involve a reduction in safety.

(i) TS 3.5.3 Suppression Chamber
Action b

The suppression chamber is required to be operable with a minimum water volume in Operational Conditions 4 and 5*. Allowances are made within the LCO and the * provision to allow draining the suppression chamber for repairs.

If, in Operational Condition 4 or 5*, the suppression chamber requirements are not met, then Action b provides remedial measures to prevent the need for cooling of irradiated fuel beyond that required by the other specifications for residual heat removal.

The proposed change to TS 3.0.4 will allow mode changes between Operational Conditions 4 and 5* due to the tensioning or detensioning of the reactor vessel head while the suppression chamber is not operable as required by the LCO. The tensioning of the reactor vessel head has no effect on cooling water requirements for irradiated fuel and therefore does not involve a reduction in safety. The proposed change to Specification 3.0.4 will also allow entering Operational Condition 5* by exiting the * provisions of Action b. Again, the provisions of Action b ensure that the cooling requirements for the irradiated fuel are not adversely affected and so compliance with this Action requirement does not involve a reduction in safety.

(j) TS 3.6.2.1 Suppression Chamber
Action g

Specification 3.6.2.1 provides a limit for total leakage between the suppression chamber and the drywell. This limit assures that the reactor coolant system (RCS) blowdown following a loss-of-coolant accident is directed to the suppression pool versus the suppression chamber air space. This is essential to the suppression chamber performing its function. If the leakage limit cannot be met, Action g prohibits increasing the reactor coolant temperature above 200°F thus precluding a RCS blowdown.

The new flexibility of the proposed Specification 3.0.4 would allow entry into Operational Condition 2 while maintaining RCS temperature below 200°F. This does not pose a safety concern since the event of concern remains precluded by compliance with action g.

(k) TS 3.7.2 Control Room Emergency Filtration System
Action a
Action c.2

The operability of the control room emergency filtration system ensures that the control room remains habitable for the operations personnel during and following all design

basis accident conditions. Action a addresses conditions where control room temperature has degraded. With temperature between 95°F and 105°F continued operation is allowed with a 4 hour operating shift. The 4 hour shift assures that the conditions do not affect safety through the potential of reduced operator performance. Transitions between Operational Conditions do not reduce the effectiveness of this compensatory measure and therefore, the proposed flexibility allowed by the proposed Specification 3.0.4 does not reduce the level of safety.

In Operational Conditions 4 and 5, the suspension of core alterations, handling of irradiated fuel and operations with a potential for draining the reactor vessel is required by action c.2 when the system's function is lost. These actions eliminate those conditions during which an accident is assumed to occur.

The proposed change to TS 3.0.4 will allow mode changes between Operational Conditions 4 and 5 due to the tensioning or detensioning of the reactor vessel head while complying with the requirements of action c.2. These mode changes do not provide any additional conditions during which an accident could occur. As such, changing Operational Conditions while complying with the requirements of Action c.2 does not result in a reduction in the level of safety.

(l) TS 3.7.3 Shore Barrier

The Shore Barrier is required to protect the site backfill from wave erosion. The action requirement requires evaluation of and justification of continued operation in a special report to the NRC. Changing Operational Conditions does not result in a reduction of safety since such operation will have been evaluated in the required special report.

(m) TS 3.8.1.2 A.C. Sources - Shutdown
Action a

The operability of the minimum specified A.C. power sources during shutdown and refueling is required to ensure that the facility can be safely maintained in the shutdown or refueling condition for an extended time period. Action a of this specification provides requirements in the event that all offsite circuits are lost and/or both divisions of the onsite A.C. power source are inoperable. These action requirements (the suspension of core alterations, handling of irradiated fuel, operations with a potential to drain the reactor vessel and crane operations over fuel pools while fuel assemblies are stored therein) eliminate those conditions during which an accident can occur while in Operation Conditions

4 or 5. With the requirements of Action a met, the primary safety concern is the removal of decay heat.

Operational Condition 4 is differentiated from Operation Condition 5 by whether or not the reactor vessel head is tensioned. The tensioning or detensioning of the reactor vessel head has no effect on decay heat generation or removal nor does it create the possibility of different accident scenarios. Decay heat removal capability during Operational Conditions 4 and 5 is addressed in the evaluations of Specifications 3.4.9.2, 3.9.11.1, and 3.9.11.2. Therefore, the additional flexibility provided by the proposed revision to Specification 3.0.4 does not result in a reduction in safety.

(n) TS 3.8.2.1 D.C. Sources - Operating
Action a

Specification 3.8.2.1 provides requirements for DC electrical sources during operation, including those for battery chargers. With an inoperable battery charger, Action a allows unlimited continued operation if the inoperable charger is replaced with the spare battery charger. The spare charger is equivalent to a regularly installed charger, thus, this substitution does not represent a degradation in safety. For the same reason, changes in Operational Condition when the spare charger is in use do not represent a degradation in safety. Therefore, the added flexibility created by the proposed Specification 3.0.4 does not create a safety reduction.

(o) TS 3.8.2.2 D.C. Sources - Shutdown
Action a

The operability of the D.C. power sources during shutdown and refueling is required to ensure that (1) the facility can be safely maintained in the shutdown or refueling condition for an extended period of time, and (2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status. Action a of this specification provides requirements in the event that both the Division 1 and Division 2 batteries are inoperable. These actic requirements (the suspension of core alterations, handl of irradiated fuel, and operations with a potential r draining the reactor vessel) eliminate those conditions during which an accident can occur while in Operational Conditions 4 or 5. With the requirements of Action a met, the primary safety concern is the removal of decay heat.

Operational Condition 4 is differentiated from Operational Condition 5 by whether or not the reactor vessel head is tensioned. The tensioning or detensioning of the reactor vessel head has no effect on decay heat generation or removal, does not create the possibility of any different

accident scenarios not already precluded and does not affect the unit's instrument and control capability. Decay heat removal capability during Operational Condition 4 and 5 are addressed in the evaluations of Specifications 3.4.9.2, 3.9.11.1 and 3.9.11.2. Therefore, the posibility created by the proposed TS 3.0.4 does not result in a reduction of safety.

(p) TS 3.8.3.2 Distribution - Shutdown
Action a
Action b

The operability of the AC and DC distribution systems during shutdown and refueling is required to ensure that (1) the facility can be safely maintained in the shutdown or refueling condition for an extended period of time and (2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status. Action a of this specification provides requirements in the event that both the Division 1 and Division 2 AC distribution systems are inoperable. Action b of this specification provides requirements in the event that both the Division 1 and Division 2 DC distribution systems are inoperable. The requirements of both Action a and Action b are identical. These requirements (the suspension of core alterations, handling of irradiated fuel, and operations with a potential for draining the reactor vessel) eliminate those conditions during which an accident can occur while in Operational Conditions 4 or 5. With these action requirements met, the primary safety concern is the removal of decay heat.

Operational Condition 4 is differentiated from Operational Condition 5 by whether or not the reactor vessel head is tensioned. The tensioning or detensioning of the reactor vessel head has no effect on decay heat generation or removal, does not create the possibility of any different accident scenario not already precluded and does not affect the unit's instrument and control capability. Decay heat removal capability during Operational Conditions 4 and 5 is addressed in the evaluations of Specifications 3.4.9.2, 3.9.11.1 and 3.9.11.2. Operability of AC sources during Operational Conditions 4 and 5 is addressed in the evaluation of Specification 3.8.1.2. Operability of DC sources during Operational Conditions 4 and 5 is addressed in the evaluation of Specification 3.8.2.2.

The mode changes associated with this Specification do not involve activities that could result in a reduction in the level of safety. The action requirements associated with each mode are identical. Therefore, the changes between Operational Condition 5 and Operational Condition 4 do not result in a reduction in the level of safety. As such, the flexibility provided by the proposed change to

Specification 3.0.4 does not result in a reduction in safety.

(q) TS 3.9.2 Refueling Operations - Instrumentation

Specification 3.9.2 assures reactivity monitoring capability is available to detect changes in the reactivity condition of the core to aid in avoiding inadvertent criticality. The action precludes activities which could significantly increase reactivity during Operational Condition 5.

Operational Condition 5 is entered by detensioning the reactor vessel head. Detensioning the reactor vessel head has no effect on positive core reactivity and so does not contribute to the probability of inadvertent criticality. As such, the added flexibility of the proposed TS 3.0.4 does not result in a reduction in the level of safety provided by this TS.

(r) TS 3.9.3 Refueling Operations - Control Rod Position

This specification ensures that Core Alterations will be performed under conditions that limit the probability of inadvertent criticality. The Action requirement suspends these Core Alterations except that one control rod may be withdrawn under control of the reactor mode switch Refuel position one-rod-out interlock. The single rod withdrawal under this condition does not significantly increase the probability of inadvertent criticality.

Operational Condition 5 is entered by detensioning the reactor vessel head. Detensioning the reactor vessel head has no effect on positive core reactivity and so does not contribute to the probability of inadvertent criticality. As such, the added flexibility of the proposed TS 3.0.4 does not result in a reduction in the level of safety provided by this TS.

(s) TS 3.9.10.1 Single Control Rod Removal

This specification ensures that maintenance or repair of control rods or control rod drives will be performed under conditions that limit the probability of inadvertent criticality. The Action requirement of this specification is to suspend removal of the control rod and/or associated control rod drive mechanism and to initiate action to satisfy the LCO.

Operational Condition 4 is differentiated from Operational Condition 3 by tensioning or detensioning the reactor vessel head. Operational Condition 3 is entered from Operational Condition 4 by increasing reactor coolant temperature above 200°F. Neither activity has the effect of adding positive core reactivity and therefore,

do not contribute to the possibility of an inadvertent criticality. As such, the added flexibility of the proposed Specification 3.0.4 does not result in a reduction in the level of safety provided by this specification.

(t) TS 3.9.11.1 Residual Heat Removal and Coolant Circulation - High Water Level

Specification 3.9.11.1 requires that at least one RHR shutdown cooling loop be in operation in Operational Condition 5, with irradiated fuel in the reactor vessel and with the water level greater than 20 feet 6 inches above the reactor vessel flange. The proposed change to Specification 3.0.4 will allow entry into this Operational Condition while relying on the provisions of the Action. This change will allow entering Specification 3.9.11.1 from 3.9.11.2 (i.e., flooding the cavity in Operational Condition 5).

The requirements of Specification 3.9.11.1 ensure that sufficient cooling capacity is available to remove decay heat and maintain water temperatures within the limits required during refueling. Compliance with the Action requirements of this specification provide an acceptable alternative for decay heat removal and thus provide an acceptably safe alternative for meeting the LCO. Therefore, the flexibility of the proposed TS 3.0.4 does not involve a reduction in the level of safety.

(u) TS 3.9.11.2 Residual Heat Removal and Coolant Circulation - Low Water Level
Action a
Action b
Action c

Specification 3.9.11.2 ensures long term cooling and reactor coolant temperature monitoring in Operational Condition 5, with irradiated fuel in the reactor vessel and with the water level less than 20 feet 6 inches above the top of the reactor vessel flange.

Operational Condition 5 is entered from Operational Condition 4 by detensioning the reactor vessel head. The Action requirements of Specification 3.9.11.2 are essentially identical to those of Specification 3.4.9.2, which is applicable in Operational Condition 4. Thus, detensioning the reactor vessel head has the effect of transferring the same action from TS 3.4.9.2 to TS 3.9.11.2. Detensioning the reactor vessel head has no effect on decay heat generation or removal, or the ability to monitor reactor coolant temperature. Therefore, the new flexibility provided by the proposed change to Specification 3.0.4 is acceptable and does not involve a reduction in safety.

Operational Condition 5 can also be entered by loading fuel into a defueled reactor. Compliance with the water level requirements for fuel movement of Specification 3.9.8 will preclude this entry while under the provisions of action c. Actions a and b require the alternate methods of either decay heat removal and/or coolant circulation be substituted for the method normally required which may be inoperable. In addition, hourly reactor coolant temperature and pressure monitoring is required if an alternate means of coolant circulation is used. The use of these alternative methods assures that this flexibility created by the proposed Specification 3.0.4 does not involve a reduction in safety.

Based upon the above evaluation, Detroit Edison concludes, that for each TS that will be affected by the proposed change to TS 3.0.4, the action statement for that TS will provide an adequate level of protection for the startup, shutdown, and extended operation of Fermi 2.

Administrative Controls for Plant Startup While Operating Within an Action Requirements

GL 87-09 states that "nothing in this staff position should be interpreted as endorsing or encouraging a plant startup with inoperable equipment," and that "plant startup should normally be initiated only when all required equipment is operable and that startup with inoperable equipment must be the exception rather than the rule." The NRC staff concern has been that adequate administrative controls must be in place to assure that required equipment is operable at plant startup and that adequate review be required of the exceptions to the proposed TS 3.0.4. In addition, the staff has been concerned that the plant operators receive the necessary training to implement these controls.

Control of maintenance at Fermi 2 is accomplished via procedure NPP-MA1-01, Work Control. This procedure outlines a prioritized system of control. The priorities are as follows:

- Priority "E" - Extreme personnel hazards, threats to public safety or immediate threats to continued safe operation of plant.
- Priority "1" - Technical Specifications/Plant Availability or capacity.
- Priority "2" - Equipment availability, personnel safety and security.
- Priority "3" - Equipment/System Reliability.
- Priority "4" - All other work not included in other priorities.

As can be seen, work requests associated with TS requirements receive a high priority.

The maintenance work priority system described above will not be changed due to the approval of the proposed change to TS 3.0.4. Detroit Edison will, in addition, implement the following additional controls for plant startup prior to implementation of the proposed change to TS 3.0.4.

During each startup any use of the proposed exception to TS 3.0.4 will be summarized during final preparations for startup. If the startup is to be performed while relying on the provisions of Action requirements then the Plant Manager (or designated alternate for the purpose of granting permission for Reactor Startup) will also specifically approve each use of TS 3.0.4 for the startup. This will assure a high-level management review of the application of the proposed TS 3.0.4.

Fermi 2 plant operators will receive the necessary training to implement these administrative controls prior to their implementation. In order to assure that these actions are conducted at the most appropriate time, Detroit Edison requests that a 60-day period be established for implementation of this amendment following approval.

Proposed Technical Specification Pages

In addition to changes provided in GL 87-09 for TS 3.0.4, changes to other TS are needed.

Individual specifications with Action requirements permitting unlimited continued operation no longer need to indicate that Specification 3.0.4 does not apply. The combined effect of the TS 3.0.4 modification and the deletion of those 3.0.4 exceptions is administrative. The flexibility provided by the exception statement is maintained and relocated in the TS 3.0.4 text. The deletion of these 3.0.4 exceptions is in accordance with the guidance of GL 87-09.

The TS and Action requirements which contain TS 3.0.4 exemptions being deleted are listed below:

3.1.3.1	Control Rod Operability Action b.3
3.1.3.2	Control Rod Maximum Scram Insertion Times Action b
3.1.3.4	Four Control Rod Group Scram Insertion Times Action b
3.1.3.5	Control Rod Scram Accumulators Action c

3.1.3.6	Control Rod Drive Coupling Action c
3.1.3.7	Control Rod Position Indication Action c
3.1.4.1	Rod Worth Minimizer Action b
3.2.3	Minimum Critical Power Ratio # Action b
3.3.1	Reactor Protection System Instrumentation Action a
3.3.2	Isolation Actuation Instrumentation Action b
3.3.3	Emergency Core Cooling System Actuation Instrumentation p. 3/4 3-26 footnote *
3.3.5	Reactor Core Isolation Cooling System Actuation Instrumentation Action b item c (p. 3/4 3-38 footnote *)
3.3.7.1	Radiation Monitoring Instrumentation Action c
3.3.7.2	Seismic Monitoring Instrumentation Action b
3.3.7.3	Meteorological Monitoring Instrumentation Action b
3.3.7.7	Traversing In-core Probe System
3.3.7.8	Chlorine Detection System Action c
3.3.7.10	Loose-part Detection Action b
3.3.7.11	Radioactive Liquid Effluent Monitoring Instrumentation Action c
3.3.7.12	Radioactive Gaseous Effluent Monitoring Instrumentation Action c

#As proposed in NRC-89-0299 of March 26, 1990.

3.4.1.1	Recirculation Loops Action a.2
3.4.4	Chemistry Action a.1
3.4.7	Main Steam Line Isolation Valves Action b
3.4.8	Structural Integrity Action d
3.6.1.3	Primary Containment Air Locks Action a.4
3.6.3	Primary Containment Isolation Valves Action b
3.7.1.5	Ultimate Heat Sink Action c Action f
3.7.6	Sealed Source Contamination Action b
3.8.4.2	Primary Containment Penetration Conducter Overcurrent Protective Devices Action b
3.11.1.2	Radioactive Effluents - Dose Action b
3.11.1.3	Liquid Waste Treatment Action b
3.11.1.4	Liquid Holdup Tanks Action b
3.11.2.2	Dose - Noble Gases Action b
3.11.2.3	Dose - Iodine-131, Iodine-133, Tritium and Radionuclides in Particulate Form Action b
3.11.2.4	Off-gas Treatment System Action b
3.11.2.5	Ventilation Exhaust Treatment System Action b
3.11.2.8	Venting or Purging Action b

3.11.3	Solid Radioactive Waste Treatment Action c
3.11.4	Total Dose Action b
3.12.1	Monitoring Program Action d
3.12.2	Land Use Census Action c
3.12.3	Interlaboratory Comparison Program Action b

The necessary page changes are attached.

Some currently stated exceptions to Specification 3.0.4 are not being deleted. These exceptions are not being deleted because the associated Action requirements would not satisfy the provisions of the revised Specification 3.0.4. The NRC staff stated in GL 87-09 that it was not the intent for the TS 3.0.4 revision to result in more restrictive requirements for individual specifications.

New Technical Specification Bases

Generic Letter 87-09 provided the NRC staff's update of the Bases to reflect the proposed modifications of Specifications 3.0.4, 4.0.3 and 4.0.4 and to include improved bases for the unchanged requirements of Sections 3.0 and 4.0. This submittal revises the proposed Bases from those originally submitted to include changes that have occurred since that time, to incorporate feedback from NRC personnel, and to reflect the resolution of Bases wording issues at other plants. Detroit Edison proposes to adopt the GL 87-09 update of the Bases with minor changes which are discussed below:

(a) In the second paragraph of the Bases for TS 3.0.3 the phrase "it is identified that" is added to the statement which indicates the point in time from which the TS 3.0.3 time limits apply. The point in time from which Action requirements apply is also defined in the updated Bases for TS 3.0.1 (first sentence of last paragraph) and for TS 4.0.3 (fourth sentence of the first paragraph). The proposed modification is appropriate since it makes the TS 3.0.3 Bases consistent with the other Bases, it conforms to current industry practice and is consistent with the previous resolution of this issue at another plant (Grand Gulf Nuclear Station).

(b) The proposed Bases for TS 4.0.2 reflects the more recent Bases provided by the NRC staff in GL 89-14 dated August 21, 1989. The changes for GL 89-14 were proposed by Detroit Edison in NRC-90-0033 dated March 26, 1990. If the GL 89-14 change is not approved prior to this amendment, Detroit Edison requests the Bases for TS 4.0.2 match the GL 87-09 wording.

(c) The first paragraph of the Bases for TS 4.0.3 is modified to reflect that the 24-hour allowance to perform overdue Surveillance Requirements upon discovery does not negate the fact that the equipment has and continues to be inoperable since the point that the Surveillance Interval (as defined by TS 4.0.2) expired. Further, the requirement to make any report is similarly not negated by the 24-hour allowance and each situation must be evaluated as discussed in NUREG 1022, Supplement 1. The Bases provided in GL 87-09 indicates that failure to perform the surveillance within the specified interval is in itself a reportable event. This would create an inconsistency in the reporting of events due to equipment inoperability depending upon whether the inoperability is caused by a missed surveillance or is caused by other reasons. The proposed modified bases is appropriate since, it resolves this inconsistency, it is in accordance with the prevalent industry practice and is consistent with the previous resolution of this issue at another plant (Perry Nuclear Power Plant).

(d) The Bases for TS 4.0.5 includes more recent wording added in response to GL 88-01. This wording was added by License Amendment No. 52.

No Significant Hazards Considerations Determination

Detroit Edison, in Reference 2, made a determination that the proposed change does not represent a Significant Hazards Consideration. This determination was based upon the basic concept, as delineated in GL 87-09, that Action requirements which allow for unlimited continued operation of a facility provide an acceptable level of safety to allow entry into an applicable operational condition or other specified condition. This submittal does not change this basic concept but rather further addresses the specifics of implementation at Fermi 2. Therefore, the basis and conclusions of the No Significant Hazards Considerations analysis of Reference 2 are not changed.

Conclusion

The change to TS 3.0.4 described in GL 87-09 provides improvements in TS consistency and increased operational flexibility. As described above, implementation of the change can be made at Fermi 2 without degrading the level of safety and under controls which assure that the new provisions are not routinely used during plant startups. Prompt review and approval of this change is requested.