



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 3, 2001

Mr. Nathan L. Haskell, Director
Licensing and Performance Assessment
Palisades Plant
27780 Blue Star Memorial Highway
Covert, MI 49043

SUBJECT: PALISADES PLANT - ISSUANCE OF AMENDMENT RE: STRUCTURE OF THE LIMITING CONDITIONS FOR OPERATION OF THE CONTAINMENT COOLING SYSTEMS, THE COMPONENT COOLING WATER SYSTEM, AND THE SERVICE WATER SYSTEM, SIMILAR TO THE CHANGES MADE IN TECHNICAL SPECIFICATIONS TASK FORCE CHANGE NO. 325 FOR THE EMERGENCY CORE COOLING SYSTEM (ECCS) (TAC NO. MB0871)

Dear Mr. Haskell:

The Commission has issued the enclosed Amendment No. 199 to Facility Operating License No. DPR-20 for the Palisades Plant. The amendment consists of changes to the Technical Specifications (TSs) in response to a portion of your application dated December 7, 2000.

The amendment changes the TSs regarding the Limiting Conditions for Operation for the containment cooling systems, the component cooling water system, and the service water system to be similar to changes to the "Standard Technical Specifications, Combustion Engineering Plants," NUREG-1432, Revision 1, made by the Nuclear Energy Institute Technical Specifications Task Force Change Number 325, "ECCS Conditions and Required Actions with < 100% Equivalent ECCS Flow."

A copy of our related safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in cursive script that reads "Darl S. Hood".

Darl S. Hood, Senior Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosures: 1. Amendment No. 199 to DPR-20
2. Safety Evaluation

cc w/encls: See next page

NRR-058

May 3, 2001

Mr. Nathan L. Haskell, Director
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Palisades Plant
27780 Blue Star Memorial Highway
Covert, MI 49043

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Sincerely,
/RA/

Darl S. Hood, Senior Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-255

- Enclosures: 1. Amendment No. 199 to DPR-20
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION

PUBLIC OGC SMiranda
PDIII-1 Reading ACRS CHarbuck
CCraig WBeckner
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NAME	SMiranda	DHood <i>DSH</i>	RBouling <i>RSB</i>	RDennig	<i>S. Hood</i>	<i>CCraig</i>
DATE	<i>SM 4/20/01</i>	<i>4/23/01</i>	<i>4/18/01</i>	3/16/01	<i>4/27/01</i>	<i>5/1/01</i>

DOCUMENT NAME: G:\PDIII-1\Palisades\AMDB0871.wpd
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Palisades Plant

cc:

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January 2000



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CONSUMERS ENERGY COMPANY

DOCKET NO. 50-255

PALISADES PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 199
License No. DPR-20

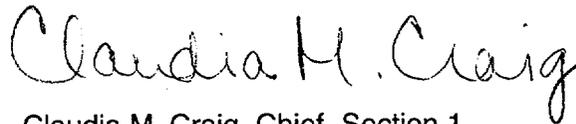
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Consumers Energy Company (the licensee) dated December 7, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public; and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to the license amendment and Paragraph 2.C.(2) of Facility Operating License No. DPR-20 is hereby amended to read as follows:

The Technical Specifications contained in Appendix A, as revised through Amendment No. 199 , and the Environmental Protection Plan contained in Appendix B are hereby incorporated in the license. Consumers Energy Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of issuance and shall be implemented within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Claudia M. Craig, Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: May 3, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 199

FACILITY OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

INSERT

3.6.6-1	3.6.6-1
3.7.7-1	3.7.7-1
3.7.8-1	3.7.8-1
B 3.6.6-7	B 3.6.6-7
B 3.6.6-8	B 3.6.6-8
B 3.6.6-9	B 3.6.6-9
B 3.6.6-10	B 3.6.6-10
B 3.6.6-11	B 3.6.6-11
-	B 3.6.6-12
B 3.7.7-6	B 3.7.7-6
B 3.7.7-7	B 3.7.7-7
B 3.7.7-8	B 3.7.7-8
-	B 3.7.7-9
B 3.7.8-5	B 3.7.8-5
B 3.7.8-6	B 3.7.8-6
B 3.7.8-7	B 3.7.8-7
B 3.7.8-8	B 3.7.8-8
-	B 3.7.8-9

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Cooling Systems

LCO 3.6.6 Two containment cooling trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment cooling trains inoperable.	A.1 Restore train(s) to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 4.	30 hours
C. Less than 100% of the required post accident containment cooling capability available.	C.1 Enter LCO 3.0.3.	Immediately

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CCW) System

LCO 3.7.7 Two CCW trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more CCW trains inoperable.	A.1 Restore train(s) to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours
C. Less than 100% of the required post accident CCW cooling capability available.	C.1 Enter LCO 3.0.3.	Immediately

3.7 PLANT SYSTEMS

3.7.8 Service Water System (SWS)

LCO 3.7.8 Two SWS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more SWS trains inoperable.	A.1 Restore train(s) to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours
C. Less than 100% of the required post accident SWS cooling capability available.	C.1 Enter LCO 3.0.3.	Immediately

BASES

LCO
(continued)

The Containment Spray System portion of the containment cooling trains includes three spray pumps, two spray headers, nozzles, valves, piping, instruments, and controls to ensure an OPERABLE flow path capable of taking suction from the SIRWT upon an ESF actuation signal and automatically transferring suction to the containment sump.

The Containment Air Cooler System portion of the containment cooling train which must be OPERABLE includes the three safety related air coolers which each consist of four cooling coil banks, the safety related fan which must be in operation to be OPERABLE, gravity-operated fan discharge dampers, instruments, and controls to ensure an OPERABLE flow path.

CAC fans V-1A, V-2A, V-3A, and V-4A must be in operation to be considered OPERABLE. These fans only receive a start signal from the DBA sequencer; they are assumed to be in operation, and are not started by either a CHP or an SIS signal.

APPLICABILITY

In MODES 1, 2, and 3, a large break LOCA event could cause a release of radioactive material to containment and an increase in containment pressure and temperature requiring the operation of the containment spray trains and containment cooling trains.

In MODES 4, 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Thus, the Containment Spray and Containment Cooling systems are not required to be OPERABLE in MODES 4, 5 and 6.

ACTIONS

A.1

Condition A is applicable whenever one or more containment cooling trains is inoperable. Action A.1 requires restoration of both trains to OPERABLE status within 72 hours. The 72 hour Completion Time for Condition A is based on the assumption that at least 100% of the required post accident containment cooling capability (that assumed in the safety analyses) is available. If less than 100% of the required post containment accident cooling is available, Condition C must also be entered.

BASES

ACTIONS

A.1 (continued)

Mechanical system LCOs typically provide a 72 hour Completion Time under conditions when a required system can perform its required safety function, but may not be able to do so assuming an additional failure. When operating in accordance with the Required Actions of an LCO Condition, it is not necessary to be able to cope with an additional single failure.

The Containment Cooling systems can provide one hundred percent of the required post accident cooling capability following the occurrence of any single active failure. Therefore, the containment cooling function can be met during conditions when those components which could be deactivated by a single active failure are known to be inoperable. Under that condition, however, the ability to provide the function after the occurrence of an additional failure cannot be guaranteed. Therefore, continued operation with one or more trains inoperable is allowed only for a limited time.

B.1 and B.2

Condition B is applicable when the Required Actions of Condition A cannot be completed within the required Completion Time. Condition A is applicable whenever one or more trains is inoperable. Therefore, when Condition B is applicable, Condition A is also applicable. (If less than 100% of the post accident containment cooling capability is available, Condition C must be entered as well.) Being in Conditions A and B concurrently maintains both Completion Time clocks for instances where equipment repair allows exit from Condition B while the plant is still within the applicable conditions of the LCO.

If the inoperable containment cooling trains cannot be restored to OPERABLE status within the required Completion Time of Condition A, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 30 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

BASES

ACTIONS
(continued)

C.1

Condition C is applicable with one or more trains inoperable when there is less than 100% of the required post accident containment cooling capability available. Condition A is applicable whenever one or more trains is inoperable. Therefore, when this Condition is applicable, Condition A is also applicable. Being in Conditions A and C concurrently maintains both Completion Time clocks for instances where equipment repair restores 100% of the required post accident containment cooling capability while the LCO is still applicable, allowing exit from Condition C (and LCO 3.0.3).

One hundred percent of the required post accident cooling capability can be provided with both MSIV bypass valves closed if either;

1. Two containment spray pumps, two spray headers, and one CAC fan are OPERABLE, or
2. One containment spray pump, two spray headers, and three safety related CACs, are OPERABLE (at least two service water pumps must be OPERABLE if CACs are to be relied upon).

One hundred percent of the required post accident cooling capability can be provided for operation with one or both MSIV bypass valves open (or closed) if;

1. One containment spray pump, two spray headers, and two safety related CACs, are OPERABLE (at least two service water pumps must be OPERABLE if CACs are to be relied upon).
2. Two containment spray pumps, one spray header, and three safety related CACs are OPERABLE (at least three service water pumps must be OPERABLE to provide the necessary service water flow to assure OPERABILITY of the CACs), or
3. One containment spray pump, one spray header, and three safety related CACs are OPERABLE (at least three service water pumps must be OPERABLE to provide the necessary service water flow to assure OPERABILITY of the CACs).

With less than 100% of the required post accident containment cooling capability available, the plant is in a condition outside the assumptions of the safety analyses. Therefore, LCO 3.0.3 must be entered immediately.

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.6.6.1

Verifying the correct alignment for manual, power operated, and automatic valves, excluding check valves, in the Containment Spray System provides assurance that the proper flow path exists for Containment Spray System operation. This SR also does not apply to valves that are locked, sealed, or otherwise secured in position since these were verified to be in the correct positions prior to being secured. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those valves outside containment and capable of potentially being mispositioned, are in the correct position.

SR 3.6.6.2

Operating each safety related Containment Air Cooler fan unit for ≥ 15 minutes ensures that all trains are OPERABLE and are functioning properly. The 31 day Frequency was developed considering the known reliability of the fan units, the two train redundancy available, and the low probability of a significant degradation of the containment cooling train occurring between surveillances.

SR 3.6.6.3

Verifying the containment spray header is full of water to the 735 ft elevation minimizes the time required to fill the header. This ensures that spray flow will be admitted to the containment atmosphere within the time frame assumed in the containment analysis. The 31 day Frequency is based on the static nature of the fill header and the low probability of a significant degradation of the water level in the piping occurring between surveillances.

SR 3.6.6.4

Verifying a total service water flow rate of ≥ 4800 gpm to CACs VHX-1, VHX-2, and VHX-3, when aligned for accident conditions, provides assurance the design flow rate assumed in the safety analyses will be achieved (Ref. 8). Also considered in selecting this Frequency were the known reliability of the cooling water system, the two train redundancy, and the low probability of a significant degradation of flow occurring between surveillances.

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.6.6.5

Verifying that each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by Section XI of the ASME Code (Ref. 5).

Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The Frequency of this SR is in accordance with the Inservice Testing Program.

SR 3.6.6.6 and SR 3.6.6.7

SR 3.6.6.6 verifies each automatic containment spray valve actuates to its correct position upon receipt of an actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. SR 3.6.6.7 verifies each containment spray pump starts automatically on an actual or simulated actuation signal. The 18 month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power.

Operating experience has shown that these components usually pass the Surveillances when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Where the surveillance of containment sump isolation valves is also required by SR 3.5.2.5, a single surveillance may be used to satisfy both requirements.

SR 3.6.6.8

This SR verifies each containment cooling fan actuates upon receipt of an actual or simulated actuation signal. The 18 month Frequency is based on engineering judgement and has been shown to be acceptable through operating experience. See SR 3.6.6.6 and SR 3.6.6.7, above, for further discussion of the basis for the 18 month Frequency.

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.6.6.9

With the containment spray inlet valves closed and the spray header drained of any solution, low pressure air or smoke can be blown through test connections. Performance of this SR demonstrates that each spray nozzle is unobstructed and provides assurance that spray coverage of the containment during an accident is not degraded. Due to the passive design of the nozzle, a test at 10 year intervals is considered adequate to detect obstruction of the spray nozzles.

REFERENCES

1. FSAR, Section 5.1
 2. FSAR, Section 14.18
 3. FSAR, Sections 6.2
 4. FSAR, Section 6.3
 5. ASME, Boiler and Pressure Vessel Code, Section XI
 6. FSAR, Table 14.18.1-3
 7. FSAR, Table 14.18.2-1
 8. FSAR, Table 9-1
 9. EA-GEJ-99-02 Rev. 0, Single Failure Assumption for Main Steam Line Break (MSLB) and Improved Tech Spec Equipment Operability Requirements, October, 2000.
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BASES

ACTIONS

A.1

Condition A is applicable whenever one or more CCW trains is inoperable. Action A.1 requires restoration of both trains to OPERABLE status within 72 hours. The 72 hour Completion Time is based on the assumption that at least 100% of the required CCW post accident cooling capability (that assumed in the safety analyses) is available. (If, however, less than 100% of the CCW post accident cooling is available, Condition C must also be entered.)

Mechanical system LCOs typically provide a 72 hour Completion Time under conditions when a required system can perform its required safety function, but may not be able to do so assuming an additional failure. When operating in accordance with the Required Actions of an LCO Condition, it is not necessary to be able to cope with an additional single failure.

The CCW system can provide one hundred percent of the required post accident cooling capability following the occurrence of any single active failure. Therefore, the CCW function can be met during conditions when those components which could be deactivated by a single active failure are known to be inoperable. Under that condition, however, the ability to provide the function after the occurrence of an additional failure cannot be guaranteed. Therefore, continued operation with one or more trains inoperable is allowed only for a limited time.

B.1 and B.2

Condition B is applicable when the Required Actions of Condition A cannot be completed within the required Completion Time. Condition A is applicable whenever one or more trains is inoperable. Therefore, when Condition B is applicable, Condition A is also applicable. (If less than 100% of the post accident CCW cooling capability is available, Condition C must be entered as well.) Being in Conditions A and B concurrently maintains both Completion Time clocks for instances where equipment repair allows exit from Condition B while the plant is still within the applicable conditions of the LCO.

If the required CCW trains cannot be restored to OPERABLE status within the associated Completion Time, the plant must be placed in a MODE in which the LCO does not apply. To achieve this status, the plant must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

BASES

ACTIONS
(continued)

C.1

Condition C is applicable with one or more trains inoperable when there is less than 100% of the required CCW post accident cooling capability available. Condition A is applicable whenever one or more trains is inoperable. Therefore, when this Condition is applicable, Condition A is also applicable. Being in Conditions A and C concurrently maintains both Completion Time clocks for instances where equipment repair restores 100% of the required CCW post accident cooling capability while the LCO is still applicable, allowing exit from Condition C (and LCO 3.0.3).

Any single CCW pump can provide one hundred percent of the required CCW post accident cooling capability. One hundred percent of the required CCW post accident cooling can also be provided despite the inoperability of one or more of those CCW valves closed by Safety Injection, which isolate cooling to non-essential loads, provided there are sufficient CCW pumps available to supply the additional flow.

The Component Cooling System cools three groups of loads:

1. Safety related loads outside the containment,
2. Non-safety related loads outside the Containment, and
3. Non-safety related loads inside the Containment.

As discussed in the Background section of these bases, each of these groups of loads can be cooled by the flow from one CCW pump.

One hundred percent of the required CCW post accident cooling capability can be provided by one CCW pump if both CCW heat exchangers are available and if:

1. One CCW Containment Isolation Valve, CV-0910, CV-0911, or CV-0940, is OPERABLE, and
2. One CCW header isolation valve for the non-safety related loads outside the containment, CV-0944, CV-0944A, or CV-0977B, is OPERABLE.

BASES

ACTIONS

C.1 (continued)

One hundred percent of the required CCW post accident cooling capability can be provided by two CCW pumps if both CCW heat exchangers are available and if:

1. One CCW Containment Isolation Valve, CV-0910, CV-0911, or CV-0940, is OPERABLE, or
2. One CCW header isolation valve for the non-safety related loads outside the containment, CV-0944, CV-0944A, or CV-0977B, is OPERABLE.

One hundred percent of the required CCW post accident cooling capability can be provided by three CCW pumps if both CCW heat exchangers are available, even with CCW flow being provided to both the safety-related loads and the non-safety related loads inside and outside the containment.

With less than 100% of the required CCW post accident cooling capability available, the plant is in a condition outside the assumptions of the safety analyses. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE
REQUIREMENTS

SR 3.7.7.1

Verifying the correct alignment for manual, power operated, and automatic valves in the CCW flow path provides assurance that the proper flow paths exist for CCW operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of potentially being mispositioned are in their correct position.

This SR is modified by a Note indicating that the isolation of the CCW to components or systems may render those components inoperable but does not affect the OPERABILITY of the CCW System.

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

BASES

SURVEILLANCE
REQUIREMENTS

(continued)

SR 3.7.7.2

This SR verifies proper automatic operation of the CCW valves on an actual or simulated actuation signal. Specific signals (e.g., safety injection, RAS) are tested under Section 3.3, "Instrumentation." This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. This SR is modified by a Note which states this SR is only required to be met in MODES 1, 2, and 3. The instrumentation providing the input signal is not required in MODE 4, therefore, to keep consistency with Section 3.3, "Instrumentation," the SR is not required to be met in this MODE. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

SR 3.7.7.3

This SR verifies proper automatic operation of the CCW pumps on an actual or simulated actuation signal in the "with standby power available" mode which tests the starting of the pumps by the SIS-X relays. The starting of the pumps by the sequencer is performed in Section 3.8, "Electrical Power Systems." This SR is modified by a Note which states this SR is only required to be met in MODES 1, 2, and 3. The instrumentation providing the input signal is not required in MODE 4, therefore, to keep consistency with Section 3.3, "Instrumentation," the SR is not required to be met in this MODE. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Section 9.3
-
-

BASES

APPLICABILITY

In MODES 1, 2, 3, and 4, the SWS System is a normally operating system, which is required to support the OPERABILITY of the equipment serviced by the SWS and required to be OPERABLE in these MODES.

In MODES 5 and 6, the OPERABILITY requirements of the SWS are determined by the systems it supports.

ACTIONS

A.1

Condition A is applicable whenever one or more SWS trains is inoperable. Action A.1 requires restoration of both trains to OPERABLE status within 72 hours. The 72 hour Completion Time is based on the assumption that at least 100% of the required SWS post accident cooling capability (that assumed in the safety analyses) is available. (If, however, less than 100% of the SWS post accident cooling is available, Condition C must also be entered.)

Mechanical system LCOs typically provide a 72 hour Completion Time under conditions when a required system can perform its required safety function, but may not be able to do so assuming an additional failure. When operating in accordance with the Required Actions of an LCO Condition, it is not necessary to be able to cope with an additional single failure.

The SWS system can provide one hundred percent of the required post accident cooling capability following the occurrence of any single active failure. Therefore, the SWS function can be met during conditions when those components which could be deactivated by a single active failure are known to be inoperable. Under that condition, however, the ability to provide the function after the occurrence of an additional failure cannot be guaranteed. Therefore, continued operation with one or more trains inoperable is allowed only for a limited time.

BASES

ACTIONS
(continued)B.1 and B.2

Condition B is applicable when the Required Actions of Condition A cannot be completed within the required Completion Time. Condition A is applicable whenever one or more trains is inoperable. Therefore, when Condition B is applicable, Condition A is also applicable. (If less than 100% of the post accident SWS cooling capability is available, Condition C must be entered as well.) Being in Conditions A and B concurrently maintains both Completion Time clocks for instances where equipment repair allows exit from Condition B while the plant is still within the applicable conditions of the LCO.

If the inoperable SWS trains cannot be restored to OPERABLE status within the associated required Completion Time of Condition A, the plant must be placed in a MODE in which the LCO does not apply. To achieve this status, the plant must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

C.1

Condition C is applicable with one or more trains inoperable when there is less than 100% of the required SWS post accident cooling capability available. Condition A is applicable whenever one or more trains is inoperable. Therefore, when this Condition is applicable, Condition A is also applicable. Being in Conditions A and C concurrently maintains both Completion Time clocks for instances where equipment repair restores 100% of the required SWS post accident cooling capability while the LCO is still applicable, allowing exit from Condition C (and LCO 3.0.3).

The Service Water System cools three groups of loads:

1. Critical loads inside the Containment,
2. Critical loads outside the Containment, and
3. Non-critical loads in the Turbine Building.

As discussed in the Background section of these bases, each of these groups of loads can be cooled by the flow from one SWS pump.

BASES

ACTIONS

C.1 (continued)

One hundred percent of the required SWS post accident cooling capability can be provided by any one SWS pump if:

1. The non-critical SWS header isolation valve, CV-1359, is OPERABLE, and
2. Plant conditions allow adequate containment cooling to be provided without reliance on CACs and one SWS Containment Isolation Valve, CV-0824 or CV-0847, is OPERABLE.

One hundred percent of the required SWS post accident cooling capability can be provided by any two SWS pumps if:

1. The non-critical SWS header isolation valve, CV-1359, is OPERABLE, or
2. Plant conditions allow adequate containment cooling to be provided without reliance on CACs and one SWS Containment Isolation Valve, CV-0824 or CV-0847, is OPERABLE.

One hundred percent of the required SWS post accident cooling capability can be provided by three SWS pumps even with SWS flow being provided to both the CACs and the Non-critical SWS header.

With less than 100% of the required SWS post accident cooling capability available, the plant is in a condition outside the assumptions of the safety analyses. Therefore, LCO 3.0.3 must be entered immediately.

BASES

SURVEILLANCE
REQUIREMENTSSR 3.7.8.1

Verifying the correct alignment for manual, power operated, and automatic valves in the SWS flow path ensures that the proper flow paths exist for SWS operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since they are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position. This SR is modified by a Note indicating that the isolation of SWS to components or systems may render those components inoperable but does not affect the OPERABILITY of the SWS.

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

SR 3.7.8.2

This SR verifies proper automatic operation of the SWS valves on an actual or simulated actuation signal. Specific signals (e.g., safety injection) are tested under Section 3.3, "Instrumentation." This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. This SR is modified by a Note which states this SR is only required to be met in MODES 1, 2, and 3. The instrumentation providing the input signal is not required in MODE 4, therefore, to keep consistency with Section 3.3, "Instrumentation," the SR is not required to be met in this MODE. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.7.8.3

The SR verifies proper automatic operation of the SWS pumps on an actual or simulated actuation signal in the "with standby power available" mode which tests the starting of the pumps by the SIS-X relays. The starting of the pumps by the sequencer is performed in Section 3.8, "Electrical Power Systems." This SR is modified by a Note which states this SR is not required to be met in MODE 4. The instrumentation providing the input signal is not required in MODE 4, therefore, to keep consistency with Section 3.3, "Instrumentation," the SR is not required to be met in this MODE. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Section 9.1
 2. FSAR, Section 6.1
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 199 TO FACILITY OPERATING LICENSE NO. DPR-20
CONSUMERS ENERGY COMPANY
PALISADES PLANT
DOCKET NO. 50-255

1.0 INTRODUCTION

By application dated December 7, 2000, Consumers Energy Company (the licensee) requested an amendment to the Technical Specifications (TSs) for the Palisades Plant. This safety evaluation addresses the portion of the December 7, 2000, application related to Technical Specification Task Force (TSTF) Change Number 325, Revision 0 (TSTF-325R0). The proposed amendment would change the TSs regarding the Limiting Conditions for Operation (LCOs) for the containment cooling systems (LCO 3.6.6), the component cooling water system (CCWS, LCO 3.7.7), and the service water system (SWS, LCO 3.7.8) to be similar to changes to the "Standard Technical Specifications [STS], Combustion Engineering Plants," NUREG-1432, Revision 1, made by TSTF-325R0. Specifically, the following changes to the Palisades TSs are proposed in accordance with TSTF-325R0:

TS 3.6.6, "Containment Cooling Systems;" TS 3.7.7, "Component Cooling Water (CCWS) System;" and TS 3.7.8, "Service Water System (SWS)"

1. The second parts of Condition A of TS 3.6.6, TS 3.7.7, and TS 3.7.8, "At least 100% of the required [post accident containment cooling capability/CCWS post accident capability/SWS post accident capability] available," would be deleted.
2. Condition B would be revised to limit its applicability to Condition A.
3. The deleted wording from Condition A of TS 3.6.6, TS 3.7.7, and TS 3.7.8 would be made a new condition, Condition C, with required actions to "Enter LCO 3.0.3" with a completion time of "Immediately."

The December 7, 2000, application also forwarded associated changes to the TS Bases.

In addition, the licensee requested (1) changes to additional systems similar to the changes in TSTF-325R0, and (2) additional changes based upon TSTFs other than TSTF-325R0. The NRC staff will address those changes by separate correspondence.

2.0 BACKGROUND

When the licensee converted the Palisades TSs to improved TSs (ITS), it adopted action requirements for the ECCS based on TS 3.5.2, "Emergency Core Cooling Systems - Operating," of the STS. Because of plant-specific design considerations, the NRC staff also approved similar action requirements for: TS 3.6.6, "Containment Cooling Systems;" TS 3.7.7, "Component Cooling Water System (CCWS);" and TS 3.7.8, "Service Water System (SWS)." These action requirements would permit continued operation for the specified completion time (usually 72 hours) in the event components from both "trains" of the specified system were inoperable provided at least one train's capability remained operable using the remaining operable components. For example, in TS 3.5.2, such ECCS inoperable situations are addressed with the following condition statement:

One or more trains of ECCS inoperable for reasons other than Condition A.

AND

At least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.

This approach could lead to problems in actual use due to the strict logic rules of the STS. Stating the condition in this way allows inoperable situations to be present in both trains, as long as 100-percent equivalent ECCS flow is available. If a situation were to subsequently occur that results in less than 100-percent equivalent ECCS flow, LCO 3.0.3 would require an immediate plant shutdown. However, with less than 100-percent equivalent ECCS flow operable, the above stated conditions would no longer exist, and by the completion time rules of TS Section 1.3, "Completion Time," the condition and required actions would be exited, and its 72-hour completion time clock reset. If flow is then restored, reentry into the condition would incorrectly result in an additional 72-hour completion time, without ever having returned a train to operable status. This is contrary to the intent of TS Section 1.3. According to TS Section 1.3, the TS should not allow exiting the condition and required actions and resetting the 72-hour completion time clock upon entering LCO 3.0.3. The condition and required actions should remain applicable until both trains of ECCS are restored to operable status or the plant is placed outside the ECCS specification's mode of applicability.

In response to this logic problem, the industry proposed a generic change, TSTF-325R0, which would revise the ECCS specification's action requirements to conform to the intent of STS Section 1.3. This was accomplished by splitting the STS condition into two conditions so that the required action for an inoperable train remains applicable regardless of overall remaining ECCS flow availability, and so that the completion time clock is not reset in the event flow is restored. Specifically, the split results in the following two separate conditions:

One or more trains of ECCS inoperable for reasons other than Condition A;

And a new condition,

Less than 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.

Stating the original condition as two separate conditions ensures the intent of STS Section 1.3 is met. In the event the plant enters the new condition addressing low flow, entry into LCO 3.0.3 would be required. However, by TS Section 1.3, the plant would also remain in the inoperable train condition, enabling a smooth transition in the event flow capability were restored so that the low flow condition would no longer apply and could, thus, be exited.

Because this clarification of the action requirements does not change the technical basis of the specification, the NRC staff approved TSTF-325R0.

3.0 EVALUATION

In view of the above clarification achieved by TSTF-325R0, the Palisades licensee proposed to adopt similar TS changes as follows:

TS 3.6.6, "Containment Cooling Systems;" TS 3.7.7, "Component Cooling Water System;" and TS 3.7.8, "Service Water System"

Condition A of TS 3.6.6, TS 3.7.7, and TS 3.7.8 would be split into two conditions;

Condition A of TS 3.6.6, TS 3.7.7, and TS 3.7.8 would address the following conditions, respectively:

- One or more containment cooling trains inoperable
- One or more CCWS trains inoperable
- One or more SWS trains inoperable

And new Condition C of TS 3.6.6, TS 3.7.7, and TS 3.7.8 would address the following conditions, respectively:

- Less than 100% of the required post accident containment cooling capability available
- Less than 100% of the required post accident CCWS cooling capability available
- Less than 100% of the required post accident SWS cooling capability available

The applicability of Condition B would be limited to Condition A.

In the first conditions stated above for these three specifications, the required actions allow 72 hours to restore the inoperable trains to operable status before requiring a plant shutdown (in accordance with Required Action B for TSs 3.6.6, 3.7.7, and 3.7.8). In the second conditions stated above for these three specifications, the required actions require immediate entry into LCO 3.0.3. These action requirements are technically identical to the existing action requirements.

The proposed revisions to the formats of the existing action requirements for the containment cooling systems, the CCWS, and the SWS are administrative changes because they do not alter the existing restrictions on plant operation, but only clarify the intent of the existing action requirements, making them consistent with the completion time rules of Palisades TS 1.3,

"Completion Time." Therefore, because these changes are purely administrative and do not change the technical basis of these specifications, they are acceptable. The licensee also forwarded conforming changes to the TS Bases. The NRC staff does not object to the licensee's changes to the TS Bases.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendment. The Michigan State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (66 FR 7677). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. Harbuck

Date: May 3, 2001