Docket No. 50-336
B14835

Attachment 1

Millstone Nuclear Power Station, Unit No. 2

Proposed Revision to Technical Specifications
Feedwater Isolation

Marked-Up Technical Specifications

May 1994

~~August 26, 1992~~

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

Main Feedwater Isolation Components (MFICs)

3/4 7-9a

"ADD"

PLANT SYSTEMS

MAIN FEEDWATER ISOLATION COMPONENTS (MFICs)

LIMITING CONDITION FOR OPERATION

3.7.1.6 Each feedwater isolation component listed in Table 3.7-3 shall be OPERABLE with response times as given in Table 3.3-5.

FW Isolation Components	Description
FW-38A	A FP Discharge MOV
FW-38B	B FP Discharge MOV
FW-42A	A FW Block MOV
FW-42B	B FW Block MOV
FW-41A	A FW Regulating Bypass Valve
FW-41B	B FW Regulating Bypass Valve
FW-51A	A FW Regulating Valve
FW-51B	B FW Regulating Valve
H5A	A SG Feedwater Pump Trip Circuitry
H5B	B SG Feedwater Pump Trip Circuitry

Table 3.7-3

APPLICABILITY: MODES 1, 2 & 3

ACTION:

a. With one feedwater isolation component inoperable in either or both feedwater flow paths, either:

1. Restore the inoperable component(s) to OPERABLE status within 72 hours, or

2. Close or isolate the inoperable feedwater isolation valve(s) within 72 hours, and verify that the inoperable feedwater isolation valve(s, is closed or isolated once per 7 days, or

3. Secure or isolate the feedwater pump(s) with inoperable feedwater pump trip circuitry within 72 hours and verify that the inoperable feedwater pump(s) is secured or isolated once per 7 days, or

4. Be in HOT SHUTDOWN within the next 12 hours.

"ADD"

LIMITING CONDITION FOR OPERATION (Continued)

b. With two or more of the feedwater isolation components inoperable in the same flow path, either:

1. Restore the inoperable component(s) to OPERABLE status within 8 hours until Action 'a' applies, or

2. Isolate the affected flow path within 8 hours, and verify that the inoperable feedwater isolation components are closed or isolated/secured once per 7 days, or

3. Be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.6 Each feedwater isolation valve/feedwater pump trip circuitry shall be demonstrated OPERABLE at least once per 18 months by:

a. Verifying that on 'A' main steam isolation test signal, each isolation valve actuates to its isolation position, and

b. Verifying that on 'B' main steam isolation test signal, each isolation valve actuates to its isolation position, and

c. Verifying that on 'A' main steam isolation test signal, each feedwater pump trip circuit actuates, and

d. Verifying that on 'B' main steam isolation test signal, each feedwater pump trip circuit actuates.

ELECTRICAL POWER SYSTEMS

"ADD"

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION (Continued)

3.8.2.1A Inverters 5 and 6 shall be OPERABLE and available for automatic transfer via static switch to VIAC-1 AND VIAC-2, respectively.

APPLICABILITY: MODES 1, 2 & 3

ACTION:

With less than the above complement of alternate sources operable, restore the inoperable source(s) to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.1A The alternate sources for busses VIAC-1 and VIAC-2 shall be determined OPERABLE and available for auto transfer at least once per 7 days through inverter/static switch 1 & 2 indication.

"ADD"

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION SYSTEMS (TURBINE BATTERY) - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.5 The following D.C. bus shall be energized and OPERABLE:

Turbine Battery consisting of 125-volt D.C. bus 201D and 125-volt D.C. battery bank 201D.

APPLICABILITY: MODES 1, 2 & 3

ACTION:

a. With the 125-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 12 hours.

b. With the 125-volt D.C. battery inoperable, restore the inoperable battery to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying indicated power availability.

4.8.2.5.2 The 125-volt battery bank shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indications marks, and
2. The pilot cell specific gravity, corrected to 77°F, is $\geq$ 1.200, and
3. The pilot cell voltage is $\geq$ 2.08 volts, and
4. The overall battery voltage is $\geq$ 125 volts.

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is $\geq$ 2.08 volts under float charge, and
2. The specific gravity, corrected to 77°F, of each cell is $\geq$ 1.200.

c. At least once per 18 months by verifying that:

1. The cells, cell plates, and battery racks show no visual indication of physical damage or deterioration, and
2. The cell-to-cell and terminal connections are clean, tight, free of corrosion, and coated with anti-corrosion material.

"ADD"

SURVEILLANCE REQUIREMENTS (Continued)

d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual loads for 1 hour when the battery is subjected to a battery service test.

e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test may be performed in lieu of the battery service test.

3/4.3.1 AND 3/4.3.2 PROTECTIVE AND ENGINEERED SAFETY FEATURES (ESF) INSTRUMENTATION (Continued)

CAR fan response time for the case without a loss of power is composed of signal generation and valves stroke time.

Feedwater isolation response time ensures a rapid isolation of feed flow to the steam generators via the feedwater regulating valves, feedwater bypass valves and, as backup, feed pump discharge valves. The response time includes signal generation time and valve stroke. Feed line block valves also receive a feedwater isolation signal since the steam line break accident analysis credits them in prevention of feed line volume flashing in some cases. Since the block valves are not credited with isolation, they are not required to operate as fast as the isolation valves although equal response times for all valves are specified.

The containment airborne radioactivity monitors (gaseous and particulate) are provided to initiate closure of the containment purge valves upon detection of high radioactivity levels in the containment. Closure of these valves prevents excessive amounts of radioactivity from being released to the environs in the event of an accident.

Feedwater pumps are assumed to trip immediately with an MSI signal.

3/4.7.1.4 ACTIVITY (Continued)

of 10 CFR Part 100 limits in the event of a steam line rupture. The dose calculations for an assumed steam line rupture include the effects of a coincident 1.0 GPM primary to secondary tube leak in the steam generator of the affected steam line and a concurrent loss of offsite electrical power. These values are consistent with the assumptions used in the accident analyses.

3/4.7.1.5 MAIN STEAM LINE ISOLATION VALVES

The OPERABILITY of the main steam line isolation valves ensures that no more than one steam generator will blowdown in the event of a steam line rupture. This restriction is required to 1) minimize the positive reactivity effects of the Reactor Coolant System cooldown associated with the blowdown, and 2) limit the pressure rise within containment in the event the steam line rupture occurs within containment. The OPERABILITY of the main steam isolation valves within the closure times of the surveillance requirements are consistent with the assumptions used in the accident analyses.

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3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

The limitation on steam generator pressure and temperature ensures that the pressure induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200-psig are based on a steam generator RT_{NDT} of 50°F and are sufficient to prevent brittle fracture.

3/4.7.3 REACTOR BUILDING CLOSED COOLING WATER SYSTEM

The OPERABILITY of the reactor building closed cooling water system ensures that sufficient cooling capacity is available for continued operation of vital components and Engineered Safety Feature equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the accident analyses.

INSERT "AA"

3/4.7.1.6 MAIN FEEDWATER ISOLATION COMPONENTS (MFICs)

Feedwater isolation response time ensures a rapid isolation of feed flow to the steam generators via the feedwater regulating valves, feedwater bypass valves, and as backup, feed pump discharge valves. The response time includes signal generation time and valve stroke. Feed line block valves also receive a feedwater isolation signal since the steam line break accident analysis credits them in prevention of feed line volume flashing in some cases. Since the block valves are not credited with isolation, they are not required to operate as fast as the isolation valves although equal response times for all valves are specified. Feedwater pumps are assumed to trip immediately with an MSI signal.

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least one of each of the onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the facility status.

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The non-safety grade 125V D.C. Turbine Battery is required for accident mitigation for a main steam line break within containment with a coincident loss of a vital D.C. bus. The Turbine Battery provides the alternate source of power for Inverters 1 & 2 respectively via non-safety grade Inverters 5 & 6. For the loss of a D.C. event with a coincident steam line break within containment, the feedwater regulating valves are required to close to ensure containment design pressure is not exceeded. The feedwater regulating valves require power to close. On loss of a vital D.C. bus, the alternate source of power to the vital A.C. bus via the Turbine Battery ensures power is available to the affected feedwater regulating valve such that the valve will isolate feed flow into the faulted generator. The Turbine Battery is considered inoperable when bus voltage is less than 125 volts D.C, thereby ensuring adequate capacity for isolation functions via the feedwater regulating valves during the onset of a steam line break.

The Turbine Battery Charger is not required to be included in Technical Specifications even though the Turbine Battery is needed to power backup Inverters 5 & 6 for a main steam line break inside containment coincident with a loss of a Class 1E D.C. bus. This is due to the fact that feedwater isolation occurs within seconds from the onset of the event.

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Attachment 2

Millstone Nuclear Power Station, Unit No. 2

Proposed Revision to Technical Specifications
Feedwater Isolation

Retyped Technical Specifications

May 1994

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PLANT SYSTEMS

MAIN FEEDWATER ISOLATION COMPONENTS (MFICs)

LIMITING CONDITION FOR OPERATION

3.7.1.6 Each feedwater isolation component listed in Table 3.7-3 shall be OPERABLE with response times as given in Table 3.3-5.

FW Isolation Components	Description
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FW-51A	A FW Regulating Valve
FW-51B	B FW Regulating Valve
H5A	A SG Feedwater Pump Trip Circuitry
H5B	B SG Feedwater Pump Trip Circuitry

Table 3.7-3

APPLICABILITY: MODES 1, 2 & 3

ACTION:

a. With one feedwater isolation component inoperable in either or both feedwater flow paths, either:

1. Restore the inoperable component(s) to OPERABLE status within 72 hours, or

2. Close or isolate the inoperable feedwater isolation valve(s) within 72 hours, and verify that the inoperable feedwater isolation valve(s) is closed or isolated once per 7 days, or

3. Secure or isolate the feedwater pump(s) with inoperable feedwater pump trip circuitry within 72 hours and verify that the inoperable feedwater pump(s) is secured or isolated once per 7 days, or

4. Be in HOT SHUTDOWN within the next 12 hours.

LIMITING CONDITION FOR OPERATION (Continued)

b. With two or more of the feedwater isolation components inoperable in the same flow path, either:

1. Restore the inoperable component(s) to OPERABLE status within 8 hours until Action 'a' applies, or

2. Isolate the affected flow path within 8 hours, and verify that the inoperable feedwater isolation components are closed or isolated/secured once per 7 days, or

3. Be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.6 Each feedwater isolation valve/feedwater pump trip circuitry shall be demonstrated OPERABLE at least once per 18 months by:

a. Verifying that on 'A' main steam isolation test signal, each isolation valve actuates to its isolation position, and

b. Verifying that on 'B' main steam isolation test signal, each isolation valve actuates to its isolation position, and

c. Verifying that on 'A' main steam isolation test signal, each feedwater pump trip circuit actuates, and

d. Verifying that on 'B' main steam isolation test signal, each feedwater pump trip circuit actuates.

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

A.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION (Continued)

3.8.2.1A Inverters 5 and 6 shall be OPERABLE and available for automatic transfer via static switch to VIAC-1 AND VIAC-2, respectively.

APPLICABILITY: MODES 1, 2 & 3

ACTION:

With less than the above complement of alternate sources operable, restore the inoperable source(s) to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 12 hours.

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4.8.2.1A The alternate sources for busses VIAC-1 and VIAC-2 shall be determined OPERABLE and available for auto transfer at least once per 7 days through inverter/static switch 1 & 2 indication.

ELECTRICAL POWER SYSTEMS

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LIMITING CONDITION FOR OPERATION

3.8.2.5 The following D.C. bus shall be energized and OPERABLE:

Turbine Battery consisting of 125-volt D.C. bus 201D and 125-volt D.C. battery bank 201D.

APPLICABILITY: MODES 1, 2 & 3

ACTION:

a. With the 125-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 12 hours.

b. With the 125-volt D.C. battery inoperable, restore the inoperable battery to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.5.1 The D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying indicated power availability.

4.8.2.5.2 The 125-volt battery bank shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that:

1. The electrolyte level of each pilot cell is between the minimum and maximum level indications marks, and
2. The pilot cell specific gravity, corrected to 77°F, is $\geq$ 1.200, and
3. The pilot cell voltage is $\geq$ 2.08 volts, and
4. The overall battery voltage is $\geq$ 125 volts.

b. At least once per 92 days by verifying that:

1. The voltage of each connected cell is $\geq$ 2.08 volts under float charge, and
2. The specific gravity, corrected to 77°F, of each cell is $\geq$ 1.200.

c. At least once per 18 months by verifying that:

1. The cells, cell plates, and battery racks show no visual indication of physical damage or deterioration, and
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SURVEILLANCE REQUIREMENTS (Continued)

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3/4.7.1.4 ACTIVITY (Continued)

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