

Docket No. 50-423  
B16427

Attachment 2

Millstone Nuclear Power Station Unit No. 3  
Proposed Revision to Technical Specification  
Containment Penetration Conductor Overcurrent Protective Devices  
PTSCR 3-23-97  
Marked Up Pages

May 1997

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PDR ADOCK 05000423  
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## MARKUP OF PROPOSED REVISION

Refer to the attached markup of the proposed revision to the Technical Specifications. The attached markup reflects the currently issued version of the Technical Specifications listed below. Pending Technical Specification revisions or Technical Specification revisions issued subsequent to this submittal are not reflected in the enclosed markup.

The following Technical Specification changes are included in the attached markup.

- The description in the surveillance of the of long-time and short-time delay trip element testing is modified.

4.8.4.1

- The description of the use of two pole in series testing is clarified.

4.8.4.1

- The description of the testing is expanded in the Bases Section.

B 3/4.8.4

# ELECTRICAL POWER SYSTEMS

## SURVEILLANCE REQUIREMENTS (Continued)

- c) For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.

AIR CIRCUIT BREAKER  
LONG-TIME AND SHORT-  
TIME DELAY TRIP  
ELEMENTS SHALL BE  
TESTED TO VERIFY THAT  
THE CIRCUIT BREAKER  
OPERATES WITHIN THE  
MANUFACTURER'S TIME  
DELAY BAND WIDTH  
FOR THE SPECIFIED  
TEST CURRENT

2) By selecting and functionally testing a representative sample of at least 10% of each type of lower voltage circuit breakers. Circuit breakers selected for functional testing shall be selected on a rotating basis.

~~Testing of air circuit breakers shall consist of injecting a current with a value equal to 300% of the pickup of the long-time delay trip element and 150% of the pickup of the short-time delay trip element, and verifying that the circuit breaker operates within the time delay band width for that current specified by the manufacturer.~~ The instantaneous element shall be tested by injecting a current equal to  $\pm 20\%$  of the pickup value of the element and verifying that the circuit breaker trips instantaneously with no intentional time delay.

Molded case circuit breakers and unitized starters (a frame size of 250 amps or less) shall be tested for long time delay at 300% as described above, and in addition tested for the instantaneous trip by injecting a current value which falls within  $+40\%$  (of the upper limit) and  $-25\%$  (of the lower limit) of the manufacturers instantaneous trip current range and verifying the breaker trips instantaneously with no intentional time delay. For those molded case circuit breakers/unitized starters used in 480V circuits, if single pole instantaneous test results fall outside these tolerances, additional instantaneous testing shall be conducted using two poles in series, including A-B, B-C and C-A phase combinations. ~~All combination test results shall fall within the specified tolerances.~~ THE BREAKER IS CONSIDERED OPERABLE.

UNGROUND

IF TEST RESULTS  
OF ALL TWO POLES  
IN SERIES  
COMBINATIONS

TO DETERMINE  
THE BREAKER'S  
OPERABILITY

- Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.

- b. At least once per 60 months by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

ELECTRICAL POWER SYSTEMSBASES3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

Containment electrical penetrations and penetration conductors are protected by either deenergizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during periodic surveillance.

The Surveillance Requirements applicable to lower voltage circuit breakers provide assurance of breaker reliability by testing at least one representative sample of each manufacturer's brand of circuit breaker. Each manufacturer's molded case and metal case circuit breakers are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers are tested. If a wide variety exists within any manufacturer's brand of circuit breakers, it is necessary to divide that manufacturer's breakers into groups and treat each group as a separate type of breaker for surveillance purposes.

The molded case circuit breakers and unitized starters will be tested in accordance with Manufacturer's Instructions.

The OPERABILITY of the motor-operated valves thermal overload protection and integral bypass devices ensures that the thermal overload protection will not prevent safety-related valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of the thermal overload protection are in accordance with Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor Operated Valves," Revision 1, March 1977.

Operating Procedure 3273, "Technical Requirements - Supplementary Technical Specifications," list containment penetration conductor overcurrent protective devices and thermal overload protection bypassed only under accident conditions and thermal overload protection not bypassed under accident conditions. The addition or deletion of any device shall be made in accordance with Section 50.59 of 10CFR50 and approved by the Plant Operation Review Committee.

Long-time trip elements are tested by injecting a test current (approximately 300% of the pickup) in accordance with the manufacturer's specifications and verifying that the circuit breaker operates within the time delay band width for that current as specified by the manufacturer. Short-time trip elements are tested by injecting a test current (approximately 150% of the pickup) in accordance with the manufacturer's specifications and verifying that the circuit breaker operates within the time delay band width for that current as specified by the manufacturer.

Attachment 3

Millstone Nuclear Power Station Unit No. 3  
Proposed Revision to Technical Specification  
Containment Penetration Conductor Overcurrent Protective Devices  
PTSCR 3-23-97  
Retyped Pages

May 1997

RETYPE OF PROPOSED REVISION

Refer to the attached retype of the proposed revision to the Technical Specifications. The attached retype reflects the currently issued version of the Technical Specifications. Pending Technical Specification revisions or Technical Specification revisions issued subsequent to this submittal are not reflected in the enclosed retype. The enclosed retype should be checked for continuity with Technical Specifications prior to issuance.



## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

- c) For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.
- 2) By selecting and functionally testing a representative sample of at least 10% of each type of lower voltage circuit breakers. Circuit breakers selected for functional testing shall be selected on a rotating basis.

Air circuit breaker long-time and short-time delay trip elements shall be tested to verify that the circuit breaker operates within the manufacturer's time delay band width for the specified test current. The instantaneous element shall be tested by injecting a current equal to  $\pm 20\%$  of the pickup value of the element and verifying that the circuit breaker trips instantaneously with no intentional time delay.

Molded case circuit breakers and unitized starters (a frame size of 250 amps or less) shall be tested for long time delay as described above, and in addition tested for the instantaneous trip by injecting a current value which falls within  $+40\%$  (of the upper limit) and  $-25\%$  (of the lower limit) of the manufacturers instantaneous trip current range and verifying the breaker trips instantaneously with no intentional time delay. For those molded case circuit breakers/unitized starters used in 480V ungrounded circuits, if single pole instantaneous test results fall outside these tolerances, additional instantaneous testing shall be conducted to determine the breaker's operability using two poles in series, including A-B, B-C and C-A phase combinations. If test results of all two poles in series combinations fall within the specified tolerances, the breaker is considered OPERABLE.

Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.

- b. At least once per 60 months by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

## ELECTRICAL POWER SYSTEMS

### BASES

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#### 3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

Containment electrical penetrations and penetration conductors are protected by either deenergizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during periodic surveillance.

The Surveillance Requirements applicable to lower voltage circuit breakers provide assurance of breaker reliability by testing at least one representative sample of each manufacturer's brand of circuit breaker. Each manufacturer's molded case and metal case circuit breakers are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers are tested. If a wide variety exists within any manufacturer's brand of circuit breakers, it is necessary to divide that manufacturer's breakers into groups and treat each group as a separate type of breaker for surveillance purposes.

Long-time trip elements are tested by injecting a test current (approximately 300% of the pickup) in accordance with the manufacturer's specifications and verifying that the circuit breaker operates within the time delay band width for that current as specified by the manufacturer. Short-time trip elements are tested by injecting a test current (approximately 150% of the pickup) in accordance with the manufacturer's specifications and verifying that the circuit breaker operates within the time delay band width for that current as specified by the manufacturer.

The molded case circuit breakers and unitized starters will be tested in accordance with Manufacturer's Instructions.

The OPERABILITY of the motor-operated valves thermal overload protection and integral bypass devices ensures that the thermal overload protection will not prevent safety-related valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of the thermal overload protection are in accordance with Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor Operated Valves," Revision 1, March 1977.

Operating Procedure 3273, "Technical Requirements - Supplementary Technical Specifications," list containment penetration conductor overcurrent protective devices and thermal overload protection bypassed only under accident conditions and thermal overload protection not bypassed under accident conditions. The addition or deletion of any device shall be made in accordance with Section 50.59 of 10CFR50 and approved by the Plant Operation Review Committee.



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Attachment 4

Millstone Nuclear Power Station Unit No. 3  
Proposed Revision to Technical Specification  
Containment Penetration Conductor Overcurrent Protective Devices  
PTSCR 3-23-97  
Background and Safety Assessment

May 1997

### Background

Technical Specification Surveillance 4.8.4.1 requires periodic testing of lower voltage circuit breakers for all containment penetration conductor overcurrent protective devices. The current specification requires testing of the delay trip elements at 300% and 150% of the pickup setting and allows use of two pole in series testing to determine Molded Case Circuit Breaker (MCCB) operability following the failure of a MCCB to pass a single pole test.

### Safety Assessment

The proposed change to modify the description in Technical Specification Surveillance 4.8.4.1.a.2 of the long-time and short-time delay trip element testing is intended to clarify the requirements for determining the operability of lower voltage circuit breakers. The current wording of the specification requires testing of long-time delay trip elements with a current value of exactly 300% of the pickup setting and short-time delay trip elements with a current value of exactly 150% of the pickup setting. The testing cannot be performed at exact values. Circuit breaker manufacturers develop a curve of current versus time for each breaker type that specifies the allowable time to trip for a specified current. Using the curve for a given breaker type, the operability of a circuit breaker can be verified by inserting a given current and verifying that the breaker trips within the allowable time delay band width for that current. Testing by the industry is typically performed at approximately 300% of the pickup setting for long-time delay trip elements and approximately 150% of the pickup setting for short-time delay trip elements. This proposed change maintains the requirement to verify the operability of the long-time and short-time delay trip elements within the Technical Specification Surveillance. However, the specification of a test current is relocated to the Bases of this surveillance requirement, as the importance of this surveillance is that the breaker trips within the allowable time delay band for a given test current, not that the test current is specifically 300% or 150% of the pickup setting. Testing will continue to be performed at approximately 300% and 150%.

License Amendment No. 13, dated January 20, 1988, approved the use of two pole in series testing to determine MCCB operability following the failure of a MCCB to pass a single pole test. This proposed change clarifies this position by specifically stating in the Technical Specification that the two pole in series test determines MCCB operability. Failure of a single pole test does not result in the MCCB being declared inoperable, but does require that all combinations of two pole in series tests be performed on that MCCB. Only if the MCCB is determined to be inoperable is the subsequent testing of a representative sample of that type breaker required. This change is considered an administrative clarification.

The proposed change to Bases 3/4.8.4 provides an expanded description of long-time and short-time delay trip element testing. This change is considered an administrative change.

In conclusion:

- The proposed change to Technical Specification Surveillance 4.8.4.1 to modify the requirements for determining the operability of lower voltage circuit breakers by using the manufacturer's curve of current versus time to test long-time and short-time delay trip elements will not change the requirement that periodic testing be performed to determine breaker operability. The circuit breaker testing is consistent with the design of the components and does not alter the operation or maintenance of the lower voltage circuit breakers.
- The proposed change to the surveillance to modify the wording associated with the use of two pole in series testing to determine Molded Case Circuit Breaker (MCCB) operability following the failure of a MCCB to pass a single pole test was previously approved in License Amendment No. 13. The modified wording clarifies the testing by specifically stating in the surveillance that the two pole in series test determines MCCB operability. This is considered an administrative change.
- The proposed change to expand the description of the long-time and short-time delay trip elements testing in the Bases Section is also considered an administrative change.

Based on the above, the proposed Technical Specification change is safe.

Attachment 5

Millstone Nuclear Power Station Unit No. 3  
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Containment Penetration Conductor Overcurrent Protective Devices  
PTSCR 3-23-97  
Significant Hazards Consideration and Environmental Consideration

May 1997



### SIGNIFICANT HAZARD DETERMINATION

NNECO has reviewed the proposed revision in accordance with 10CFR50.92 and has concluded that the revision does not involve a significant hazards consideration (SHC). The bases for this conclusion is that the three criteria of 10CFR50.92(c) are not satisfied. The proposed revision does not involve a SHC because the revision would not:

1. Involve a significant increase in the probability or consequence of an accident previously evaluated.

The proposed change to Technical Specification Surveillance 4.8.4.1 to modify the requirements for determining the operability of lower voltage circuit breakers by using the manufacturer's curve of current versus time to test long-time and short-time delay trip elements will not change the requirement that periodic testing be performed to determine breaker operability. The circuit breaker testing is consistent with the design of the components and performing surveillance testing does not involve a significant increase in the probability of an accident previously evaluated. The proposed change will provide assurance that the breakers will perform consistent with accident analyses and does not involve a significant increase in the consequence of an accident previously evaluated.

The proposed change to the surveillance to modify the wording associated with the use of two pole in series testing to determine Molded Case Circuit Breaker (MCCB) operability following the failure of a MCCB to pass a single pole test was previously approved in License Amendment No. 13. The modified wording clarifies the testing by specifically stating in the surveillance that the two pole in series test determines MCCB operability. This is considered an administrative change.

The proposed change to expand the description of the long-time and short-time delay trip elements testing in the Bases Section is also considered an administrative change.

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

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change to use a curve of current versus time instead of the description in Technical Specification Surveillance 4.8.4.1. of the of long-time and short-time delay trip element testing does not alter the design, operation, or maintenance of the lower voltage circuit breakers.



The proposed change to the surveillance to modify the wording associated with the use of two pole in series testing to determine MCCB operability and the expanded description of the long-time and short-time delay trip elements testing in the Bases Section are considered administrative changes.

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

3. Involve a significant reduction in a margin of safety.

The current wording of Technical Specification Surveillance 4.8.4.1 requires testing of long-time delay trip elements with a current value of exactly 300% of the pickup setting and short-time delay trip elements with a current value of exactly 150% of the pickup setting. The testing can not be performed at exact values. Circuit breaker manufacturers develop a curve of current versus time for each breaker type that specifies the allowable time to trip for a specified current. Using the curve for a given breaker type, the operability of a circuit breaker can be verified by inserting a given current and verifying that the breaker trips within the allowable time delay band width for that current. Testing by the industry is typically performed at approximately 300% of the pickup setting for long-time delay trip elements and approximately 150% of the pickup setting for short-time delay trip elements. The proposed change to the surveillance to modify the requirements for determining the operability of circuit breakers by using the manufacturer's curve of current versus time to test delay trip elements will continue to provide assurance that lower voltage circuit breakers for all containment penetration conductor overcurrent protective devices will operate consistent with the assumptions of the accident analysis.

The proposed change to the surveillance to modify the wording associated with the use of two pole in series testing to determine MCCB operability and the expanded description of the long-time and short-time delay trip elements testing in the Bases Section are considered administrative changes.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

In conclusion, based on the information provided, it is determined that the proposed changes do not involve an SHC.

#### Environmental Considerations

NNECO has reviewed the proposed license amendment against the criteria of 10CFR 51.22 for environmental considerations. The proposed changes do not involve a SHC, do not significantly increase the type and amounts of effluents that may be released off site, nor significantly increase individual or cumulative occupational radiation

exposures. Based on the foregoing, NNECO concludes that the proposed changes meet the criteria delineated in 10CFR 51.22(c)(9) for categorical exclusion from the requirements of an environmental impact statement.