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Monticello Nuclear Generating Plant
Operated by Nuclear Management Company, LLC

February 15, 2007

L-MT-07-018
10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Monticello Nuclear Generating Plant
Docket 50-263
License No. DPR-22

License Amendment Request to Revise Technical Specification Surveillance Requirement 3.8.4.2 for the 250 VDC Division 2 Battery Charger Output

In accordance with the provisions of 10 CFR 50.90, the Nuclear Management Company, LLC (NMC) is hereby requesting a change to Appendix A of the Monticello Nuclear Generating Plant (MNGP) Renewed Operating License No. DPR-22.

By letter dated June 5, 2006, the NRC issued License Amendment 146 for the MNGP Technical Specifications. This amendment approved the NMC request to convert from the MNGP Custom Technical Specifications to the MNGP Improved Standard Technical Specifications (ITS).

During the implementation of License Amendment 146, the NMC identified an administrative error that had been included and subsequently approved as part of the ITS conversion. Surveillance Requirement (SR) 3.8.4.2 states that the battery chargers in each Division of the 250 VDC electrical power subsystems are verified to supply ≥ 150 amps. This license amendment requests a revision to SR 3.8.4.2 to differentiate that the Division 1 battery chargers are verified to supply ≥ 150 amps and the Division 2 battery chargers are verified to supply ≥ 110 amps. This change is required because the Division 2 battery chargers output current limiter is field adjusted to supply 120 to 125 amps in order to stay within the electrical circuit breaker ratings in the associated distribution cabinet.

Enclosure 1 contains a description and summary safety assessment of the proposed Technical Specification change as well as the technical bases for the changes. It also contains the 10 CFR 50.92 Significant Hazards Evaluation and the Environmental Assessment that provides the bases for the conclusion that the amendment request involves no significant hazards consideration and meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)9.

Enclosure 2 contains the marked-up Technical Specification pages. Enclosure 3 contains the page change instructions and the retyped Technical Specification pages.

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Enclosure 4 contains the marked-up Technical Specification Bases pages (provided for information only).

The Plant Operations Review Committee has reviewed this application. A copy of this submittal, including the Determination of No Significant Hazards Consideration, is being forwarded to our appointed state official pursuant to 10 CFR 50.91(b)(1).

NMC requests approval of this license amendment request by February 1, 2008, with an implementation date within 60 days of the date of issuance.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on February 15, 2007.

John T. Conway
Site Vice President, Monticello Nuclear Generating Plant
Nuclear Management Company, LLC

Enclosures (4)

cc: Administrator, Region III, USNRC
Project Manager, Monticello, USNRC
Resident Inspector, Monticello, USNRC
Minnesota Department of Commerce

ENCLOSURE 1

Licensee's Evaluation of Proposed Change

1.0 DESCRIPTION

This letter is a request from the Nuclear Management Company, LLC (NMC) to amend the Renewed Operating License DPR-22 for the Monticello Nuclear Generating Plant (MNGP). This proposed change will revise the Technical Specifications (TS) to correct an administrative error that inadvertently and incorrectly indicated that the battery chargers for each Division of the 250 VDC electrical power subsystems in Surveillance Requirement (SR) 3.8.4.2 are verified to supply ≥ 150 amps. This license amendment requests a revision to SR 3.8.4.2 to differentiate that the Division 1 battery chargers are verified to supply ≥ 150 amps and the Division 2 battery chargers are verified to supply ≥ 110 amps. This change is required because the Division 2 battery chargers output current limiter is field adjusted to supply 120 to 125 amps in order to stay within the electrical circuit breaker ratings in the associated distribution cabinet (D-100).

2.0 PROPOSED CHANGE

The NMC is proposing to revise SR 3.8.4.2 to specify the difference between the 250 VDC Division 1 and Division 2 subsystems by reformatting the SR to state the following:

SURVEILLANCE		FREQUENCY
SR 3.8.4.2	Verify each required battery charger supplies the following: • ≥ 150 amps for the 250 VDC Div 1 • ≥ 110 amps for the 250 VDC Div 2 • ≥ 50 amps for the 125 VDC subsystems at greater than or equal to the minimum established float voltage for ≥ 4 hours. <u>OR</u> Verify each required battery charger can recharge the battery to the fully charged state within 24 hours for 250 VDC subsystems and 8 hours for 125 VDC subsystems while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.	24 months

3.0 BACKGROUND

The 250 VDC batteries are sized to provide adequate voltage at the terminals of connected loads for the duration of a 4 hour Station Blackout (SBO) event. The demands placed on the battery by a SBO event envelope the demands which would be placed on the batteries by any Design Basis Event. Both divisions of the essential 250 VDC batteries consist of 120 cells of the lead - calcium type. The manufacturer's ampere ratings for these batteries are based on 1 minute and 1, 4 and 8 hour discharge rates which result in an ending terminal voltage of 210 volts (equivalent to 1.75 volts per cell).

The battery chargers are sized to charge the batteries while supplying the normal continuous DC loads. The Division 1 and Division 2 chargers are powered from separate essential motor control centers. There are two Division 1 chargers (D-52 and D-53) and a swing charger (D-54). There are also two Division 2 chargers (D-70 and D-80) and a swing charger (D-90). The battery chargers are sized to charge the associated battery while supplying the normal continuous battery loads.

The battery chargers are full wave, filtered type with silicon controlled rectifiers used as the power-control elements. The chargers are convection cooled and rated for continuous operation in a 40°C ambient environment. The housings are free standing, NEMA Type I, and are ventilated. The chargers are suitable for float charging a lead-acid battery at 2.25 Volts per cell and are capable of supplying an equalizing charge at 2.33 Volts per cell. The chargers operate from a 480 VAC, 3-phase, 60 Hz supply. Battery charger output voltage is maintained within +/- ½ percent from 0-100 percent of charger rated load with a supply voltage variation of 10 percent and a frequency variation of 5 percent. The chargers comply with the applicable NEC, NEMA, and UL Standards.

The two 250 VDC batteries and related apparatus are located in independently ventilated battery rooms. Any normal operational load connected to either division of the 250 VDC system can be supplied by two chargers from that division. The third standby charger is available from each division and can be used should one of the other two chargers fail.

Under and over-voltage relays provide alarms if voltage on the bus increases or decreases below preset values. A high voltage shutdown of the battery chargers with an alarm is provided.

4.0 TECHNICAL ANALYSIS

By letter dated June 29, 2005, the NMC submitted a license amendment request to convert the MNGP Custom Technical Specifications (CTS) to the ITS format. By letter dated June 5, 2006, the NRC Staff issued License Amendment 146 for the MNGP approving the conversion of the MNGP CTS to ITS.

Previously, the applicable surveillance requirement, SR 4.9.B.4, "Station Battery System," item c., in the CTS required, "Every refueling interval, the station batteries shall be subjected to a rated load discharge test. Determine specific gravity and voltage of each cell after the discharge." Conversion to ITS added new surveillance requirements, including two options under SR 3.8.4.2, the first of which required verification that each battery charger supply greater than or equal to 150 amps for the 250 VDC subsystems at greater than or equal to the minimum established float voltage for ≥ 4 hours. During review of procedures for implementation of License Amendment 146 it was discovered that this requirement of SR 3.8.4.2 could not be met for both 250 VDC subsystems. This license amendment requests a revision to SR 3.8.4.2 to provide separate ampere requirements for each 250 VDC subsystem (Division).

This is an inadvertent administrative error introduced into the 250 VDC subsystems description in the ITS conversion because the 250 VDC battery chargers are designed to supply ≥ 150 amps (output current limiter factory setting is 172.5 amps), and the 250 VDC Division 1 battery chargers do supply ≥ 150 amps, but the Division 2 battery chargers output current limiters were field adjusted to supply 120 to 125 amps to stay within the circuit breaker ratings in the 125/250 VDC Distribution Cabinet D-100.

With the current limiters field adjusted to supply 120 to 125 amps the chargers are still able of recharge the 250 VDC battery in less than eight hours, which is well within the 24 hour limit of the MNGP TS. This license amendment requests a revision to SR 3.8.4.2 to indicate that each Division 1 battery charger is verified to supply ≥ 150 amps and each Division 2 battery charger be verified to supply ≥ 110 amps which will ensure that the amperage will stay within the circuit breaker ratings in the associated distribution cabinet (D-100). With the Division 2 battery charger limit set at ≥ 110 amps it has been calculated that it will take each of the 250 VDC battery chargers less than eight hours to recharge the Division 2 battery, which is well within the 24 hour limit specified in the TS.

As previously stated, SR 3.8.4.2 provides two options to satisfy the requirements of the SR. NMC has determined that Option 1 cannot be met for the 250 VDC Division 2 battery chargers because they do not supply greater than or equal to 150 amps at greater than or equal to the minimum established float charge for ≥ 4 hours. Option 2 requires verification that each battery charger can recharge the battery to the fully charged state within 24 hours for the 250 VDC subsystems...while supplying the largest

combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.

Although Option 2 is achievable, it has been determined that the requirements to satisfy this SR complicate testing and would challenge the station battery performance during refueling outages, as follows. To satisfy the requirements of Option 2 the 250 VDC Division 2 battery would need to be discharged and recharged multiple times during a refueling outage to qualify all three battery chargers, i.e., D-70, D-80 and D-90. Multiple discharging and recharging of the 250 VDC Division 2 battery will provide additional complications for refueling outage scheduling by affecting the availability of the 250 VDC divisions and impacts safety by reducing the time that the associated division would be OPERABLE during the outage. The repeated testing will require additional site and craft support and may extend refueling outages. Additionally, the repeated discharges in a short period of time would adversely affect the 250 VDC Division 2 battery capacity and its expected life.

As previously stated, the NMC is proposing that the TS limit for the Division 2 battery charger be set at ≥ 110 Amps. At this setting it has been calculated that it would take the 250 VDC battery chargers less than eight hours to recharge the Division 2 battery, which is well within the 24 hour limit specified in the TS.

Therefore, based on the difference between the MNGP CTS and ITS, the NMC has concluded that this TS change is needed to conform with the actual field testing of the MNGP 250 VDC Division 2 battery chargers.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Considerations

The Nuclear Management Company, LLC (NMC) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response: No.

   The proposed license amendment corrects an administrative error inadvertently introduced during the Improved Technical Specifications (ITS) conversion. Current Surveillance Requirement (SR) 3.8.4.2 provides two options for verifying battery charger supply capability. The first option currently requires each battery charger to supply ≥ 150 amps for each of the 250 VDC subsystems, and ≥ 50 amps for the 125 VDC subsystems, at greater than or equal to the minimum

established float voltage for ≥ 4 hours. The second option is unaffected by this proposed change.

The NMC is proposing to correct the first option of SR 3.8.4.2 to require verification that each battery charger can supply the following: ≥ 150 amps for the 250 VDC Division 1 subsystem, ≥ 110 amps for the 250 VDC Division 2 subsystem, and ≥ 50 amps for the 125 VDC subsystems at greater than or equal to the minimum established float voltage for ≥ 4 hours.

The proposed change for 250 VDC Division 2 battery charger ampere requirements has no affect on plant operations, design function or analysis that verifies the capability of a System, Structure or Component (SSC) to perform a design function. The NMC has determined that the proposed amendment would not change any of the previously evaluated accidents in the Updated Final Safety Analysis Report. The proposed change does not increase the likelihood of the malfunction of an SSC, and there is no potential impact on analyzed accidents.

Since the proposed change is administrative, the previously evaluated accident precursors or initiators are not affected and, as a result, the probability of accident initiation will remain the same as previously evaluated. Furthermore, the proposed change does not affect the design function, or operation of any SSC, nor will it affect any maintenance, modification, or testing activities. Thus, there will be no impact on the capability of any SSCs to perform their credited safety functions to prevent an accident or mitigate the consequences of an accident previously evaluated.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

This proposed license amendment corrects an administrative error within SR 3.8.4.2 inadvertently introduced during the ITS conversion. The proposed change does not affect the design, function, or operation of any plant SSCs, nor does it affect any maintenance, modifications, or testing activities. There is no impact on the process variables, characteristics, or functional performance of any SSCs in a manner that could create a new failure mode. Furthermore, the change does not introduce any new modes of plant operation or eliminate any actions required to prevent or mitigate accidents.

NMC has concluded that the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

   Response: No.

   The proposed license amendment to revise the 250 VDC Division 2 battery charger ampere limit within SR 3.8.4.2 does not exceed or alter a design basis or safety limit nor does it significantly reduce the margin of safety. The proposed change does not involve any hardware changes or physical alteration of the plant and the change has no impact on the design or function of any SSCs. Furthermore, the change does not eliminate any requirements, impose any new requirements, or alter any physical parameters which could reduce the margin to an acceptance limit.

   Therefore, the proposed change does not involve a significant reduction in a margin of safety.

   Based on the above, the NMC has concluded that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

The MNGP was designed largely before the publishing of the draft 70 General Design Criteria (GDC) for Nuclear Power Plant Construction Permits proposed by the Atomic Energy Commission (AEC) for public comment in July, 1967 and the 1971 publishing of the GDCs in Appendix A to 10 CFR 50. As such, MNGP is not licensed to the GDCs. Appendix E of the MNGP Updated Safety Analysis Report (USAR) provides a plant comparative evaluation to the 70 proposed AEC design criteria. NMC believes that the MNGP design is in conformance with the intent of the GDCs. Applicable GDCs from the draft 70 GDCs (Pre-GDCs) and corresponding GDC are provided below.

- <u>AEC Pre-GDC 24 - Emergency Power for Protection Systems (Category B)</u> In the event of the loss of all off-site power, sufficient alternate sources of power shall be provided to permit the required functioning of the protection systems.

- <u>AEC Pre-GDC 39 - Emergency Power for Engineered Safety Features (Category A)</u> Alternate power systems shall be provided and designed with adequate independency, redundancy, capacity, and testability to permit the functioning required of the engineered safety features. As a minimum, the on-site power system and the off-site power system shall each, independently, provide this capacity assuming a failure of a single active component in each power system.

- GDC 17--Electric power systems. An onsite electric power system and an offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety. The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

  The onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure.

10 CFR 50.36(c)(3), Surveillance Requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

The NMC has evaluated the proposed change against the applicable regulatory requirements and acceptance criteria as described herein. Based on the considerations discussed previously, (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.

6.0 ENVIRONMENTAL CONSIDERATION

The NMC has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. The proposed amendment does not involve (i) a significant hazards consideration, or (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for a categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, the NMC concludes pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

ENCLOSURE 2

MONTICELLO NUCLEAR GENERATING PLANT

LICENSE AMENDMENT REQUEST
REVISE TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT 3.8.4.2
FOR THE 250 VDC DIVISION 2 BATTERY CHARGER OUTPUT

MARKED-UP TECHNICAL SPECIFICATION PAGE

(1 page follows)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	7 days
SR 3.8.4.2	Verify each required battery charger supplies the following: ~~≥ 150 amps for 250 VDC subsystems and ≥ 50 amps for 125 VDC subsystems,~~ at greater than or equal to the minimum established float voltage for ≥ 4 hours. OR Verify each required battery charger can recharge the battery to the fully charged state within 24 hours for 250 VDC subsystems and 8 hours for 125 VDC subsystems while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.	24 months

- ≥ 150 amps for the 250 VDC Div 1
- ≥ 110 amps for the 250 VDC Div 2
- ≥ 50 amps for the 125 VDC subsystems

ENCLOSURE 3

MONTICELLO NUCLEAR GENERATING PLANT

LICENSE AMENDMENT REQUEST
REVISE TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT 3.8.4.2
FOR THE 250 VDC DIVISION 2 BATTERY CHARGER OUTPUT

RETYPED TECHNICAL SPECIFICATION PAGE

(1 page follows)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	7 days
SR 3.8.4.2	Verify each required battery charger supplies the following: • ≥ 150 amps for 250 VDC Div 1 • ≥ 110 amps for 250 VDC Div 2 • ≥ 50 amps for 125 VDC subsystems, at greater than or equal to the minimum established float voltage for ≥ 4 hours. OR Verify each required battery charger can recharge the battery to the fully charged state within 24 hours for 250 VDC subsystems and 8 hours for 125 VDC subsystems while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.	24 months

ENCLOSURE 4

MONTICELLO NUCLEAR GENERATING PLANT

LICENSE AMENDMENT REQUEST
REVISE TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT 3.8.4.2
FOR THE 250 VDC DIVISION 2 BATTERY CHARGER OUTPUT

MARKED-UP TECHNICAL SPECIFICATION BASES PAGE

(1 page follows)
(Provided for Information Only)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1

Verifying battery terminal voltage while on float charge helps to ensure the effectiveness of the battery chargers, which support the ability of the batteries to perform their intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery and maintain the battery in a fully charged state while supplying the continuous steady state loads of the associated DC subsystem. On float charge, battery cells will receive adequate current to optimally charge the battery. The voltage requirements are based on the nominal design voltage of the battery and are consistent with the minimum float voltage established by the battery manufacturer (2.20 Vpc or 132 V (for each 250 VDC subsystem battery) and 125.6 V (for each 125 VDC subsystem battery) at the battery terminals). This voltage maintains the battery plates in a condition that supports maintaining the grid life (expected to be approximately 20 years). The 7 day Frequency is conservative when compared with manufacturer recommendations and IEEE-450 (Ref. 9).

SR 3.8.4.2

This SR verifies the design capacity of the battery chargers. According to Regulatory Guide 1.32 (Ref. 10), the battery charger supply is recommended to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and duration ensures that these requirements can be satisfied.

Div 1

and each Div 2 battery charger be capable of supplying ≥ 110 amps

This SR provides two options. One option requires that each battery charger be capable of supplying ≥ 150 amps for the 250 VDC subsystems and ≥ 50 amps for the 125 VDC subsystems at the minimum established float voltage for 4 hours. The ampere requirements are based on the output rating of the chargers. The voltage requirements are based on the charger voltage level after a response to a loss of AC power. The time period is sufficient for the charger temperature to have stabilized and to have been maintained for at least 2 hours.

The other option requires that each battery charger be capable of recharging the battery after a service test coincident with supplying the largest coincident demands of the various continuous steady state loads (irrespective of the status of the plant during which these demands occur). This level of loading may not normally be available following the battery service test and will need to be supplemented with additional loads. The duration for this test may be longer than the charger sizing