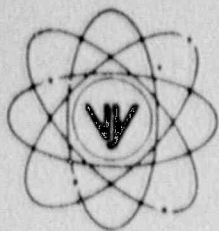


VERMONT YANKEE NUCLEAR POWER CORPORATION

PROPOSED CHANGE #160



Ferry Road, Brattleboro, VT 05301-7002

BVY 90-044

REPLY TO:
ENGINEERING OFFICE

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April 8, 1990

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

References: a) License No. DPR-28 (Docket No. 50-271)

Dear Sir:

Subject: Auxiliary Electric Power System Technical Specifications

Pursuant to 10CFR Part 50.59 of the Commission's Rules and Regulations, Vermont Yankee Nuclear Power Corporation hereby proposes the following modifications to Appendix A of the Operating License.

PROPOSED CHANGE

Replace pages 174, 174a, 175, 178a, and 180 of the Vermont Yankee Technical Specifications with the attached pages 174, 174a, 175, 175a, 178a, and 180. Add new page 176a (attached).

These proposed changes:

1. Modify the listing of DC systems equipment covered by the Specification to include the batteries and their associated buses in addition to the chargers in each system. Presently, only the chargers are listed as being required in this section, which contradicts 3.10.B.2 which addresses "battery systems" as being inoperable.
2. Change the test discharge requirements specified to include a Service (Load Profile) Discharge Test once per operating cycle (approximately 18 months) for two cycles and then a Performance (Capacity) Discharge Test during the third cycle (approximately every five years). This replaces the current requirement to perform a "rated load test" on the battery every operating cycle. Additionally, the requirement for these tests have been expanded to include all safety related batteries.
3. Replaces the requirement to measure temperature on the cells adjacent to the pilot cells with the requirement to measure temperature of the pilot cell itself.

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4. Relocates all operability and surveillance requirements for the batteries of the 480V Uninterruptible Power Systems subsection from its present location to the Battery Systems subsection.
5. Adds LCO and Surveillance requirements for the AS-2 Alternate Shutdown Battery.
6. Deletes the Standby ECCS charger as being available for use as a spare if a ECCS charger becomes inoperative.
7. Adds a requirement to measure and record pilot cell electrolyte level to weekly battery surveillances.
8. Adds a requirement to measure and record electrolyte temperature, level, and cell voltage during quarterly battery surveillance.
9. Adds the AS-2, ECCS, and UPS battery systems to the "Operation With Inoperable Components" section.

REASON FOR CHANGE

The proposed change is requested for the following reasons:

1. To define batteries and their associated buses, in addition to the chargers, as being required under technical specifications. The existing specifications only require the chargers to be operable in section 3.10.A.2 whereas section 3.10.B.2 requires the entire "battery system" to be operable. This change removes the inconsistency between these two sections.
2. To modify the test discharge requirements to include performance and service testing requirements and intervals to be consistent with present industry practices and standards. The existing surveillance requirements only require a once per operating cycle "rated load test" of the Station batteries. This has been interpreted to mean a performance test but is ambiguous. This change removes the ambiguities and expands discharge testing requirements to include performance and service testing for all safety related batteries at a frequency which is recommended by current industry standards.
3. The present surveillance requirement to measure the temperature of cells adjacent to the pilot cells has been replaced with the requirement to measure the temperature of the pilot cell itself. This pilot cell temperature measurement is used to correct the specific gravity to 77°F for consistency and enhance trending. Measuring temperatures of adjacent cells to the pilot cell is contrary to current industry practices and standards. The temperature of every sixth cell will be measured quarterly for the purpose of specific gravity correction.

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4. All UPS system requirements have been moved to the Battery System subsection of the specification to group all battery and associated system component requirements in one section. The surveillance requirements for these batteries are made consistent with those for other safety related batteries except the UPS service discharge test requirement will be fulfilled during the Integrated ECCS test (Surveillance requirement 4.10.A.2.g) using actual system loads.
5. The AS-2 battery was added to address fire protection requirements in 10CFR50, Appendix R. This change provides surveillance requirements for that battery to be consistent with other safety related batteries.
6. The safety function of the ECCS chargers require them to be available in an accident. The spare charger is in a location which may become harsh after an accident. Since the Standby ECCS Battery Charger is not environmentally qualified, credit cannot be taken for the spare charger after an accident.
7. The monitoring of the electrolyte level in a cell is an important parameter to be monitored during battery surveillances and is recommended by both the battery manufacturers and IEEE.
8. The electrolyte temperature and level and cell voltage are important parameters to be monitored during quarterly battery surveillances and is recommended by both the battery manufacturers and IEEE. IEEE recommends the temperature of every sixth cell be measured and recorded.
9. The AS-2, ECCS, and UPS battery systems were not mentioned in this section of the existing Technical Specifications. This change provides a specification for addressing any of these systems being inoperable.

SAFETY CONSIDERATIONS

1. The expansion of the specification to include batteries and their associated DC buses as required equipment in addition to the presently listed chargers are human factors improvements. Although not specified in the existing specifications in section 3.10.A.b, it was interpreted that the batteries and associated DC buses were necessary equipment and treated appropriately as if they were actually listed. This interpretation was necessary because of the wording of section 3.10.B.2 which specifies the entire "battery system" must be operable. This change removes the inconsistency between these sections and any questions as to whether the batteries and associated DC buses are necessary equipment. This change decreases the possibility of necessary batteries being placed out of service without proper evaluation of impact on continued operation of the plant. This change, therefore, enhances the safety of the plant by ensuring batteries and associated DC buses vital to plant safety are available and operable.

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2. The existing surveillance requirement for load testing of the battery did not address service testing and was not in accordance with the testing recommendations, standards, and practices of the industry. This change increases the safety of the plant because more rigorous testing of the battery is required by the proposed change. The new testing methods will increase the probability that a degraded cell or battery condition will be detected.
3. The present surveillance requirement to measure the temperature of cells adjacent to the pilot cells has been replaced with the requirement to measure the temperature of the pilot cell itself. The pilot cell temperature measurement is used to correct the specific gravity to 77°F to ensure data consistency and enhance trending. Measuring temperature of adjacent cells to the pilot cell is contrary to current industry practices and standards. Therefore, this requirement has been deleted in favor of the more meaningful measure of the pilot cell temperature.
4. The UPS battery system requirements have been moved to the Battery Systems subsection of the specification to allow grouping all battery requirements for these batteries have been made consistent with other safety related batteries. The moving of these sections to the Battery System subsection is a human factors improvement to the specifications and reduces the probability of technical specification violations due to ambiguity and inconsistency of requirements.
5. The AS-2 battery was installed to address fire protection requirements in 10CFR Part 50, Appendix R. This change provides LCO and surveillance requirements for the AS-2 battery to be consistent with other safety related batteries.
6. The Standby ECCS Battery Charger is not environmentally qualified for the area that it is located in in case of an accident. However, it is required to be in its present location due to 10CFR Part 50, Appendix R considerations. The impact of this change is that in the case of a ECCS charger failure, the ECCS charger will have to be repaired and returned to service within three days or the reactor operation discontinued per Specification 3.10.B.2.c (which has not been changed). It is not expected that any failure would take longer than 3 days to repair due to availability of spare parts for these chargers.
7. Measurement of pilot cell electrolyte level provides basis for correcting specific gravity for temperature. This correction provides a more meaningful specific gravity for the purposes of trending, determining state of charge and the need for adding water to the cell(s).

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8. The monitoring of electrolyte temperature, level and cell voltage during quarterly surveillance is meaningful in determining the necessity to add water or adjust the battery charger float voltage.
9. The addition of the AS-2, ECCS, and UPS battery systems to the "Operation With Inoperable Components" section of the Technical Specifications provides action to be taken if an inoperable condition exists. This ensures proper and timely action is taken for each of these systems should an inoperable condition exist.

Therefore, we conclude that these proposed changes do not constitute an unreviewed safety question as defined by 10CFR Part 50.59(a)(2).

This proposed change has been reviewed by the Vermont Yankee Nuclear Safety Audit and Review Committee.

SAFETY HAZARDS CONSIDERATIONS

The standards used to arrive at a determination that a request for amendment involves no significant hazards considerations are included in the Commission's regulation, 10CFR Part 50.92, which state that the operation of the facility in accordance with the proposed amendment would not:

- o involve a significant increase in the probability or consequences of an accident previously evaluated; or
- o create the possibility of a new or different kind of accident from any accident previously evaluated; or
- o involve a significant reduction in a margin of safety.

The discussion below addresses each of the three criteria, and demonstrates that the proposed changes do not constitute a significant hazards consideration.

Proposed change numbers 1 and 4 are changes made to improve the human factors aspect of the technical specifications. These changes do not negatively impact safety in that there is no reduction in the existing requirements. In the case of change number 1, by adding the batteries and their associated DC buses to the list of required equipment, the inconsistency between sections 3.10.A.1 and 3.10.B.2 is removed. The safety is enhanced by ensuring the batteries and associated DC buses, in addition to the chargers, are operable and addressed within the scope of the surveillance test program in a consistent and industry accepted manner. Change number 4 does not change any requirements for the UPS battery system, it merely relocates these requirements to the Battery Systems subsection. As such, these changes do not increase the probability or consequences of accidents previously evaluated. Similarly, no new or different kinds of accidents involving safety related systems are created by these changes, nor do any of these changes result in reduced plant operating or design safety margins.

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Proposed change number 2 revises the surveillance requirements for the safety related batteries to include a Service Test every operating cycle (approximately every 18 months) for two cycles and then Performance Test at the third cycle (approximately every 5 years). This is an improvement over the existing Technical Specification discharge testing requirements which address only the 125V batteries, address only performance testing, are ambiguous and do not conform with the current industry practices. The result of this improvement is that the probability of detecting a potentially degraded cell or battery is increased, thereby increasing the overall reliability and availability of safety related batteries. There is no equipment or design change associated with this proposed change. Therefore, this change does not increase the probability or consequences of accidents previously evaluated. Similarly, no new or different kinds of accidents involving safety related systems are created by this change, nor does this change result in reduced plant operating or design safety margins.

Proposed change number 3 replaces the requirement to measure the temperatures of cells adjacent to the pilot cell with the new requirement to measure the temperature of the pilot cell (for the purpose of correcting specific gravity for temperature). The existing requirement is not currently industry practice or standard. Because this requirement is replaced with a more meaningful requirement, this change does not increase the probability or consequences of accidents previously evaluated. Similarly, no new or different kinds of accidents involving safety related systems are created by this change, nor does this change result in reduced plant operating or design safety margins.

Proposed change number 5 adds LCO and surveillance requirements for the new Alternate Shutdown Battery AS-2. These requirements are consistent with requirements for other safety related batteries. This battery was designed and installed as a safety related battery system to address fire protection concerns in response to the requirements of 10CFR Part 50, Appendix R. The operability requirements have been proposed to specifically address these fire protection concerns. This battery is a replacement for certain functions of the station battery in an Appendix R event. Hence, the surveillance testing requirements are the same as for the Main Station battery. As such, this change does not increase the probability or consequences of accidents previously evaluated. Similarly, no new or different kinds of accidents involving safety related systems are created by this change, nor does this change result in reduced plant operating or design safety margins.

Proposed change number 6 deletes the ability to take credit for the Standby ECCS charger as a substitute in the case of an ECCS charger failure. This change only impacts the availability for use of this charger as a spare while the failed charger is being repaired. The LCO requirements for the installed charger failed is being repaired. The LCO requirements for the installed charger have not changed. Further, the consequences of the charger failing have not changed. As such, this change does not increase the probability or consequences of accidents involving safety related system are created by this change, nor does this change result in reduced plant operating or design safety margins.

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Proposed change numbers 7 and 8 add the requirement to measure additional critical battery parameters. These will ensure the batteries are monitored for those critical parameters which affect state of charge and to ensure proper electrolyte levels. Because this requirement enhances the surveillance requirements, this change does not increase the probability or consequences of accidents previously evaluated. Similarly, no new or different kinds of accidents involving safety related systems are created by this change, nor does this change result in reduced plant operating or design safety margins.

Proposed change number 9 addresses the action to be taken if one of the AS-2, ECCS, and UPS battery systems become inoperable. This ensures that proper and timely action is taken should an inoperable condition exist. Because this change only addresses action to be taken if a component in one of these systems becomes inoperable and does not increase the probability or consequences of the component being inoperable, it does not increase the probability or consequences of any accidents previously evaluated. Similarly, no new or different kinds of accidents involving safety related systems are created by this change, nor does this change result in reduced plant operating or design safety margins.

Therefore, we conclude that all the proposed changes do not constitute a significant hazards consideration, as defined in 10CFR Part 50.92(c).

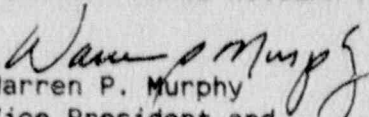
SCHEDULE OF CHANGE

These proposed changes will be incorporated into Vermont Yankee Technical Specifications as soon as practicable following receipt of your approval.

We trust that the information provided above adequately supports our request. However, should you have any questions in this matter, please do not hesitate to contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION


Warren P. Murphy
Vice President and
Manager of Operations

/dm

cc: USNRC Regional Administrator, Region I
USNRC Resident Inspector, VYNPS
USNRC Project Manager, VYNPS
VT Department of Public Service

