July 30, 2004

Mr. Christopher M. Crane
President and Chief Nuclear Officer
AmerGen Energy Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: OYSTER CREEK NUCLEAR GENERATING STATION - ISSUANCE OF AMENDMENT RE: ELECTRICAL POWER SOURCES (TAC NO. MB8481)

Dear Mr. Crane:

The Commission has issued the enclosed Amendment No. 245 to Facility Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station, in response to your application dated April 21, 2003, as supplemented by letters dated September 11, 2003, March 31, 2004, and April 16, 2004.

The amendment revised the Technical Specifications, Sections 3.7 and 4.7, "Auxiliary Electrical Power," and added a new Section 6.8.5, "Station Battery Monitoring and Maintenance Program," to make them generally consistent with guidance set forth in NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR [Boiling Water Reactor]/4," Revision 2, and with the industry guidance identified as Technical Specifications Task Force traveler 360, Revision 1.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/RA/

Peter S. Tam, Senior Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-219

Enclosures: 1. Amendment No. 245 to DPR-16
2. Safety Evaluation

cc w/encls: See next page

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AMERGEN ENERGY COMPANY, LLC

DOCKET NO. 50-219

OYSTER CREEK NUCLEAR GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 245
License No. DPR-16

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by AmerGen Energy Company, LLC, et al., (the licensee), dated April 21, 2003, as supplemented by letters dated September 11, 2003, March 31, 2004, and April 16, 2004, 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; and

   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 this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-16 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 245, are hereby incorporated in the license. AmerGen Energy Company, LLC, shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Richard J. Laufer, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: July 30, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 245

FACILITY OPERATING LICENSE NO. DPR-16

DOCKET NO. 50-219

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

Remove	Insert
3.7-1	3.7-1
3.7-2	3.7-2
3.7-3	3.7-3
--	3.7-3a
3.7-4	3.7-4
--	3.7-4a
--	3.7-4b
4.7-1	4.7-1
4.7-2	4.7-2
4.7-3	4.7-3
4.7-4	4.7-4
4.7-5	4.7-5
4.7-6	4.7-6
6-12	6-12

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 245

TO FACILITY OPERATING LICENSE NO. DPR-16

AMERGEN ENERGY COMPANY, LLC

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

1.0 INTRODUCTION

By letter dated April 21, 2003 (Accession No. ML031200661), AmerGen Energy Company (AmerGen, the licensee) submitted an application for amendment, proposing to change the Technical Specifications (TSs) for Oyster Creek Nuclear Generating Station (OCNGS). The application was supplemented by letters dated September 11, 2003 (Accession No. ML032651047), and March 31, 2004 (Accession No. ML040970232), which clarified information to the proposed TS Bases 4.7-6, withdrew a one-time request for deferral of Surveillance Requirement (SR) 4.7.C.5.b for battery C, and provided additional information in response to the Nuclear Regulatory Commission (NRC) staff's request for additional information dated March 24, 2004. On April 16, 2004, the licensee provided another supplemental letter (Accession No. ML041130416) to correct a typographical error. The licensee's supplemental letters provided clarifying information within the scope of the original application and did not change the NRC staff's initial proposed no significant hazards consideration determination.

The licensee proposed to revise the OCNGS TS for station batteries B and C, and associated battery chargers, through revision of Specifications 3.7 and 4.7 ("Auxiliary Electrical Power"), and addition of a new Specification 6.8.5, "Station Battery Monitoring and Maintenance Program." The proposed changes are generally consistent with the guidelines of Specifications 3.8.4, 3.8.6, and 5.5.14 of NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR [Boiling Water Reactor]/4," Revision 2, which are based on the NRC-approved industry Technical Specification Task Force (TSTF) change TSTF-360, Revision 1, "DC [Direct Current] Electrical Rewrite." TSTF-360 was found acceptable by the NRC staff (letter, W. D. Beckner to A. R. Pietrangelo, December 18, 2000, Accession No. ML003778381).

2.0 REGULATORY EVALUATION

2.1 Background

As stated before, TSTF-360, Revision 1, was approved for incorporation into the Standard Technical Specifications (STS) by the NRC staff. TSTF-360, Revision 1, provides guidance for the rewrite of current TS requirements for Class 1E DC power supply systems as referenced in the STS, Revision 1 (i.e., NUREG-1430 for Babcock & Wilcox, NUREG-1431 for Westinghouse, NUREG-1432 for Combustion Engineering, NUREG-1433 General Electric (BWR/4), and NUREG-1434 for General Electric (BWR/6)). The acceptability of a licensee-proposed rewrite of its DC electrical systems TS requirements is based on the NRC staff's review and evaluation of the licensee's justifications for each of the proposed changes. This includes justifications for revising, relocating, and removing current plant-specific requirements in order to convert the current TSs into new TS limiting conditions for operation (LCOs) 3.8.4, 3.8.5, 3.8.6, and 5.5.19 similar to those outlined in the TSTF. In general, in adopting the staff-approved TSTF-360, Revision 1, licensees are expected to address the following areas to be consistent with TSTF-360 during conversion of plant TSs to the Improved TS (ITS) format of the above stated NUREG reports:

(a) Relocation of preventive maintenance SRs to licensee-controlled programs;

(b) Specification of alternate testing criteria for battery charger testing;

(c) Replacement of battery specific gravity monitoring with float current monitoring;

(d) Relocation of maintenance surveillance for cell voltage and electrolyte level based on the industry recommendations in Institute of Electrical and Electronic Engineers (IEEE) Standard 450-1995 to a licensee-controlled program, and creation of a new section in the TS regarding this station battery monitoring and maintenance program (this will be a TS-controlled activity with its detailed requirements relocated to a plant procedure);

(e) Addition of specific Actions and increased Completion Times for out-of-limits conditions for battery cell voltage, electrolyte level, and electrolyte temperature;

(f) Elimination of the "once per 60 month" restriction on replacing the battery service test with the battery modified performance discharge test; and

(g) Provision of enhanced TS Bases for each of the newly proposed TS 3.8.4, 3.8.5, and 3.8.6.

In particular, the NRC staff will review licensee justifications for adopting the various elements of TSTF-360 for consistency with the revised Bases of the TSTF. These Bases were reviewed and accepted by the NRC staff during the review of TSTF-360, Revision 0, and TSTF-360, Revision 1, which was submitted by the Nuclear Energy Institute (NEI) on behalf of the industry on February 4, 2000, and November 6, 2000, respectively.

2.2 Regulatory Requirements

The NRC staff applied the following regulatory requirements to review the licensee's application:

2.2.1 General Design Criterion (GDC)-17

GDC-17, "Electric Power System," of Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," requires that an onsite electric power system and an offsite electric power system be provided to permit functioning of structures, systems and components (SSC) important to safety. The onsite system is required to have sufficient independence, redundancy, and testability, to perform its safety function, assuming a single failure. The offsite power system is required to be supplied by two physically independent circuits that are designed and located so as to minimize, to the extent practical, the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. In addition, this criterion requires provisions to minimize the probability of losing electric power from the remaining electric power supplies as a result of loss of power from the unit, the offsite transmission network, or the onsite power supplies.

2.2.2 General Design Criterion (GDC)-18

GDC-18, "Inspection and Testing of Electric Power Systems," requires that electric power systems that are important to safety must be designed to permit appropriate periodic inspection and testing.

2.2.3 10 CFR 50.36(c)(2)(ii) Requirements

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to have TSs as part of the operating license. The Commission's regulatory requirements related to the content of the TSs are set forth in 10 CFR 50.36. That regulation requires the TSs to include items in five specific categories, including: (1) safety limits, limiting safety system settings, and limiting control settings; (2) LCOs; (3) SRs; (4) design features; and (5) administrative controls. However, the regulation does not specify the particular requirements to be included in a plant's TSs.

Under 10 CFR 50.36(c)(2)(ii), an LCO must be included in the TSs for any item meeting one or more of the following four criteria:

1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary;

2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;

3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that

either assumes the failure of or presents a challenge to the integrity of a fission product barrier; and

4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

As a result, existing TS requirements that fall within or satisfy any of the criteria in 10 CFR 50.36 must be retained in the TSs, while those TS requirements that do not fall within or satisfy these criteria may be relocated to other licensee-controlled documents.

3.0 TECHNICAL EVALUATION

OCNGS's 125-volt Station DC System consists of three batteries A, B, and C, and associated distribution system. Station batteries B and C are designated as safety-related subsystems while battery A is designated as a non-safety related subsystem (and not addressed within the scope of this application for amendment). Safety-related loads are supplied by station batteries B and C, each with two associated full capacity chargers. One charger on each battery is in service at all times with the second charger available in the event of the charger described as "in service at all times" is declared inoperable.

Station battery B is rated at 1504 ampere-hours (at an 8-hour discharge rate) and is sized to provide power for all connected loads for up to 3 hours while maintaining adequate voltage levels to all loads. Station battery C is rated at 1200 ampere-hours (at an 8-hour discharge rate) and is sized to provide power for all connected loads for up to 8 hours while maintaining adequate voltage levels to all loads. The only exception to the assumed loads on station batteries are the DC motor-operated valves (MOVs), which rely on the station battery chargers to provide adequate voltage for high energy line break (HELB) isolation.

Station batteries B and C are estimated to be 98 percent charged when the battery charging current is stable at $\leq$2 amps. Each battery is sized to perform its duty cycle at the 98 percent charged level. When measured at float voltage, the charging current of a correctly charged battery is an accurate measure of the capability of the battery. References to "fully charged" throughout this amendment application assume a battery charge that is reflected by a charging current of $\leq$ 2 amps.

For each Class 1E DC power system, one station battery charger is maintained in-service and connected to maintain the battery in a fully charged condition at a nominal 132 volts while supplying normal steady state DC loads. Each charger can also provide equalizing charge voltage to its connected battery as required. Each station battery also has an alternate Class 1E full capacity qualified charger that can be manually placed in service if needed. Each Class 1E station battery charger has sufficient capacity to maintain the normal steady state DC loads during station operation while fully recharging its respective battery.

At OCNGS, the DC MOVs in the Isolation Condenser and Reactor Water Cleanup (RWCU) Systems required for HELB isolation are part of the Generic Letter (GL) 89-10 Program. These valves take credit for the availability of the DC system at voltages that require the station battery chargers to be connected and supplying DC load to meet the assumed isolation requirements. The battery chargers for the B and C Distribution Systems are designed to automatically load, restart onto the Emergency Diesel Generators, and pickup vital loads. The battery chargers

can supply float voltage within the time required such that the DC MOVs can perform their isolation function within their time requirements. Battery chargers Cl and C2 for the C Distribution System and charger A/B for the B Distribution System are static type chargers that remain connected to their respective power supplies, and will restart when power is restored. Battery Charger B for the B Distribution System is an MG set type charger that will restart and reload automatically on restoration of AC power.

The licensee proposed to relocate the preventive maintenance SRs and battery cell parameter requirements to a licensee-controlled program that would provide for administrative control of these requirements, and thus will assure the battery is maintained at current levels of performance. The proposed relocation allows flexibility to monitor and control these limits at values directly related to the ability of the battery to perform its assumed function, and allows the TS to focus on parameter value degradations that approach levels that may impact battery operability.

The licensee's proposed changes to the TSs are described in detail in its April 21, 2003, application and supplements, and is not repeated here.

3.1 Evaluation of Licensee's Proposed Changes:

The licensee has grouped the above proposed changes into 10 general changes, which are evaluated in the following Subsections 3.1.1 thru 3.1.10. Each of the subsections below retains the wording of the licensee's caption given to each group of changes.

3.1.1 Provide Specific Actions and Increased Restoration Time for An Inoperable Station Battery Charger And Add Station Battery Charger Load Test

The licensee proposed to add a new Specification 3.7.B.3 that references the acceptability of continuing reactor operation as allowed by the proposed Actions of new Specification 3.7.D. The current Specification 3.7.B requires plant shutdown in the event that auxiliary electrical power is not available (as required by Specification 3.7.A), except as allowed by Specifications 3.7.B.1 and 3.7.B.2. Based on this review, the NRC staff finds the change retains the same requirements in the current Specification 3.7.B, meets 10 CFR 50.36 requirements, is consistent with the intent of NUREG-1433, Revision 2, and, therefore, is acceptable.

The licensee proposed to add new Specification 3.7.D.1 to address restoration actions for an inoperable station battery charger for: (1) Ensuring that a battery charging source is applied to the battery within 2 hours (Action 3.7.D.1.a: Restore associated station battery terminal voltage to greater than or equal to the minimum established float voltage); (2) Ensuring that the station battery is fully recharged within 12 hours and periodically re-verifying it remains charged (Action 3.7.D.1.b: Verify battery float current is $\leq$ 2 amps once per 12 hours); and (3) Restoring the station battery charger to operable status within 7 days (Action 3.7.D.1.c).

The licensee provided justification for the proposed new Specification 3.7.D.1 by addressing conditions where the required station battery charger for any one system becomes inoperable, and stated that the proposed new Specification 3.7.D.1.c will provide a restoration time within 7 days for an inoperable battery charger on one DC system, and this time is contingent upon a focused and tiered approach for assuring that adequate station battery capability is maintained. The first priority of this approach is to minimize the battery discharge, and thus Specification

3.7.D.1.a will assure that the discharge is terminated within 2 hours by requiring that the station battery terminal voltage be restored to greater than or equal to the minimum established float voltage within that time. This proposed change is more restrictive because there is no comparable limitation in the current OCNGS TS, and this new specification will provide an enhancement to continued safe plant operation. The second tier action (Specification 3.7.D.1.b) requires that within 12 hours (and continuing at 12-hour intervals), verification is made for ensuring that the battery has sufficient capacity to perform its assumed duty cycle. This is accomplished by verifying the battery float current is $\leq$2 amps. The 12-hour limit is provided to allow some recharging of lost capacity that has occurred during the initial 2 hours, and thus the proposed change provides a reasonable time to fully recharge the battery. The final tier action (Specification 3.7.D.1.c) extends the restoration time for an inoperable charger (beyond the existing immediate plant shutdown) to 7 days.

The NRC staff finds the proposed 7 days to be a reasonable time, given that the DC bus remains energized (as required by Specification 3.7.A.1.e), the battery discharge is terminated (Specification 3.7.D.1.a), and the battery is fully recharged (Specification 3.7.D.1.b). The NRC staff concurs that these new Specifications focus efforts on retaining battery capabilities, retaining the requirement for charger operability, and applying a reasonable restoration time for an inoperable battery charger while avoiding an unnecessary plant shutdown transient. The licensee further states that during periods when one or more station battery chargers are inoperable, the OCNGS design is such that certain Isolation Condenser and RWCU isolation valves would not be capable of performing the intended function in the event of specific HELBs. As such, in conjunction with the proposed Specification 3.7.D.1 for an inoperable station battery charger, the impacted isolation valves would also be declared inoperable (as required by the definition of operability). This would also requires the actions associated with these inoperable valves to be taken. The additional actions applicable to inoperable HELB MOVs would initially be directed by Specification 3.5.A.3.a, which allows 4 hours to isolate the affected penetration. Once isolated, Specification 3.8.C (for an inoperable Isolation Condenser) will require its restoration within 7 days. The NRC staff finds these additional actions provide appropriate compensatory actions for the OCNGS-specific plant design in the event of an inoperable station battery charger, and provide support for the basis of the proposed Specification 3.7.D.1. Therefore, the NRC staff finds that the proposed changes meet GDCs 17 and 18, conform with 10 CFR 50.36 requirements, are consistent with NUREG-1433, Revision 2, and are, therefore, acceptable.

The licensee proposed to add a new SR 4.7.C.4.b for station battery charger load test. The licensee stated that the new SR verifies the design capacity of the station battery chargers. As described in the OCNGS Updated Final Safety Analysis Report (UFSAR), Section 8.3.2.1, the battery charger capability is based on the normal steady state DC system loads during station operation and the charging capacity to restore the battery from the design minimum charged state to the fully charged state. The battery is considered fully recharged when the measured charging current is $\leq$ 2 amps. The new SR 4.7.C.4.b(i) requires that each required station battery charger (i.e., only one charger per station battery is "required" for compliance with Specification 3.7.A.4) be capable of supplying the amperes listed for the specified charger at the minimum established float voltage for 4 hours. The ampere requirements are based on the design output rating of the chargers. The voltage requirements are based on the normal minimum established float voltage. The licensee provided justification that this 4-hour time period is sufficient for the charger temperature to have stabilized and to have maintained its stabilization for at least 2 hours. Alternately, the proposed new SR 4.7.C.4.b(ii) allows that the

battery charger load test be capable of recharging the battery after a service test coincident with normal steady-state DC loads during station operation. However, this level of loading may not normally be available following the battery service test, and may need to be supplemented with additional loads. The duration for this test may be longer than the charger sizing criteria since the battery recharge is affected by float voltage, temperature, and exponential decay of the charging current. The licensee stated that this optional testing method for OCNGS is slightly different from the optional criteria in TSTF-360 and NUREG-1433 for STS SR 3.8.4.2. The specific wording of the OCNGS criteria is taken from UFSAR Section 8.3.2.1, which does not express an explicit minimum time required to complete this recharge. Since no design basis assumptions depend on this recharge time, the licensee contends that omission of this acceptance criterion constitutes plant-specific implementation of the “bracketed” duration from the STS surveillance.

Based on this review, the NRC staff finds the proposed change focuses on retaining battery capabilities, and retaining charger operability with reasonable restoration time for an inoperable battery charger to avoid an unnecessary plant shutdown transient. The NRC staff finds the proposed change meets the requirements of GDCs 17 and 18, is consistent with the intent of NUREG-1433, Revision 2 and, therefore, is acceptable.

3.1.2 Replace Station Battery Specific Gravity Monitoring With Battery Float Current Monitoring

The licensee proposed to delete the specific gravity limits and monitoring frequencies of Specifications 4.7.B.1.d, 4.7.B.2.c, and 4.7.B.3.c. In their place, a new SR 4.7.C.1.b, is proposed to be added which will require weekly confirmation that station battery B and C float current is $\leq$ 2 amps when battery terminal voltage is greater than or equal to the minimum established float voltage of Specification 4.7.C.1 a. Proposed Specification 3.7.D.2.b will add additional monitoring of the battery float voltage and impose new requirements to restore battery float current to within these limits within 12 hours.

Additionally, the proposed Specification 3.7.D.2.b will ensure additional monitoring of the battery float voltage (assuring the charger's ability to maintain the minimum established float voltage) and imposes the requirement to restore battery float current to within these limits within 12 hours. The licensee stated that, based on the OCNGS specific analyses testing and generic industry information provided in TSTF-360, the battery is estimated to be 98 percent charged when the charging current measurement is stable at less than or equal to 2 amps for the station batteries. Each of the station batteries has been sized to perform its duty cycle at the 98 percent charged level, and the appropriate battery float current limit for the station batteries is 2 amps. The NRC staff concurs that the licensee’s proposed use of float current to determine the state of charge of the battery is consistent with Section 4.5 of IEEE Standard 450-1995 and with TSTF-360, Revision 1. Based on this review, the NRC staff finds the proposed change to be more restrictive than the current specific gravity limits SR, and that the proposed change meets the requirements of GDCs 17 and 18, conforms with 10 CFR 50.36 requirements, is consistent with the intent of NUREG-1433, Revision 2, and is, therefore, acceptable.

3.1.3 Relocate (and Increase) Limiting Values For Station Battery Float Voltage

The licensee proposed to revise the specific value for minimum station battery float voltage in Specification 4.7.B.1.c (which is being renumbered to become the new Specification 4.7.C.1.a)

to "greater than or equal to the minimum established float voltage." The basic premise of surveillance based on 10 CFR 50.36 is that SRs represent the minimum acceptable requirements for operability of the required equipment; and thus failure to meet station battery float voltage requirements do not necessarily mean that the battery is not capable of performing its safety function. The corrective action is generally a routine or preventive maintenance type activity; for this reason, the licensee proposed to relocate the details of the current surveillance acceptance criteria to the TS Bases. Future changes of the relocated details will be subject to review under 10 CFR 50.59, "Changes, tests, and experiments," to determine if the proposed changes will require prior NRC review and approval, and will require reporting in accordance with 10 CFR 50.71(e), "Maintenance of records, making of reports." The NRC staff reviewed the proposed relocation and agrees that the item proposed to be relocated does not meet 10 CFR 50.36 criteria to be included in the TSs, and is, therefore, acceptable to be relocated.

The licensee stated that existing float voltage limits (125.4 V for station battery B, and 120 V for station battery C) are being increased to reflect the manufacturers' minimum float voltage (130.2 V) as presented in the Bases. Based on its review, the NRC staff finds the proposed float voltage limits to be more restrictive than the existing limits. The NRC staff concludes that the new limits remain in conformance with GDCs 17 and 18, meet 10 CFR 50.36 requirements, are consistent with the intent of NUREG-1433, Revision 2, and are, therefore, acceptable.

3.1.4 Revise Surveillance Frequency for Station Battery Surveillance Requirements

The licensee proposed to revise the surveillance frequency for station batteries as follows:

(a) The frequency of monitoring station battery electrolyte level is revised from "weekly" (Specification 4.7.B.1 a), "quarterly" (Specification 4.7.B.2.a), and "annual" (Specification 4.7.B.3.a), to "monthly" (proposed new Specification 4.7.C.2.a);

(b) The frequency of monitoring each station battery pilot cell voltage is revised from "weekly" (Specification 4.7.B.1.b), to "monthly" (proposed new Specification 4.7.C.2.b); and

(c) The ”quarterly” frequency of monitoring each station battery connected cell voltage is editorially renumbered from Specification 4.7.B.2.b to 4.7.C.3. The "annual" (Specification 4.7.B.3.b) frequency for monitoring connected cell voltage was extraneous to the quarterly requirement. As such, the licensee proposed to have it deleted.

The licensee stated that OCNGS is adopting a commitment to IEEE Standard 450, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," 1995 edition (with the exception of specific gravity monitoring frequency). The NRC staff finds the proposed changes to be consistent with IEEE Standard 450-1995. The frequency of monitoring station battery electrolyte level and pilot cell voltage is being changed from weekly to monthly; this is, however, consistent with the 31-day completion time that has been approved by the NRC staff in TSTF-360. The licensee also stated that changes in these parameters are expected to occur gradually and therefore, the monthly monitoring is deemed adequate to provide reasonable assurance of the battery

operability. Additionally, the weekly monitoring of station battery float voltage and float current can detect changes in cell voltage at more frequent intervals.

Based on this review, the NRC staff finds the proposed changes contain the necessary elements to ensure that the batteries will continue to be maintained in a highly reliable condition, conform with GDC 17 and 18 requirements, are consistent with the intent of NUREG-1433, Revision 2, and are, therefore, acceptable.

3.1.5 Add Station Battery Electrolyte Temperature Limit and Surveillance

The licensee proposed to add Specification 4.7.C.2.c as an operability limit (with specific value reflected in the Bases) and monthly surveillance monitoring for station battery pilot cell electrolyte temperature. This change is a more restrictive change. In addition, a new Specification 3.7.D.2.d is also added to address situations where pilot cell electrolyte temperature is less than minimum established design limits, with a restoration time of 12 hours.

The NRC staff reviewed the proposed changes and finds them to provide monitoring requirements that are consistent with IEEE Standard 450-1995, and will enhance operability of the battery. These changes will ensure that the batteries are maintained in a highly reliable condition. The proposed changes ensure the battery parameters (maintenance, testing, and monitoring) are performed in accordance with the “Battery Monitoring and Maintenance Program” as specified in the new Specification 6.8.5.

Based on this review, the NRC staff finds the proposed changes contain the necessary elements to ensure that the batteries will continue to be maintained in a highly reliable condition, will conform with GDC 17 and 18 requirements, are consistent with the intent of NUREG-1433, Revision 2, and are, therefore, acceptable.

3.1.6 Create New Station Battery Monitoring and Maintenance Program

The licensee proposed to add a new Specification 6.8.5, "Station Battery Monitoring and Maintenance Program," that will require a program that provides administrative requirements for restoration and maintenance, based on the recommendations of IEEE Standard 450. The program consists of the following:

(a) Actions to restore station battery cells with float voltage <2.13 volts, and

(b) Actions to equalize and test station battery cells that have been discovered with electrolyte level below the top of the plates.

The proposed Specification 6.8.5 makes the TSs more restrictive since such requirements do not currently exist. It will ensure the battery parameters (maintenance, testing, and monitoring) are performed in accordance with the IEEE Standard 450. The NRC staff finds the proposed Specification 6.8.5 contains the necessary elements to ensure that the batteries will continue to be maintained in a highly reliable condition, will conform with GDC 17 and 18 requirements, is consistent with the intent of NUREG-1433, Revision 2, and is, therefore, acceptable.

3.1.7 Provide Specific Actions with Increased Restoration Time For Certain Station Battery And Battery Cell Parameter Out-Of-Limits Conditions

The licensee proposed to add a new Specification 3.7.D.2 to provide action restoration times for station batteries with out-of-limits parameters. New Specification 3.7.D.3 provides required action for one inoperable station battery where the inoperability is other than one of the addressed parameter limits not met. These new actions address the following:

(a) Action 3.7.D.2.a: Cell float voltages < 2.07 volts with restoration time of 24 hours. In conjunction with these specific Actions for battery cell voltage, proposed surveillance 4.7.C.2.b and 4.7.C.3 revise the acceptance criteria to 2.07 volts.

The NRC staff reviewed the proposed change and concurs that with any cell voltage <2.07 volts, the battery is considered degraded, based on the design of the battery. The purpose of the proposed Action is to verify that: (a) the battery terminal voltage is greater than or equal to minimum established float voltage; and that (b) the battery float current is within limits. These requirements assure that there is still sufficient capacity in the battery to perform its intended function, and continued operations up to 24 hours is permitted to allow the restoration of the affected cell(s) voltage to greater than or equal to 2.07 volts. Based on this review, the NRC staff finds the proposed change will ensure the battery parameters (maintenance, testing and monitoring) are performed in accordance with the “Battery Monitoring and Maintenance Program” as specified in the new Specification 6.8.5, meets GDC 17 and GDC 18 requirements, and is consistent with the intent of NUREG-1433, Revision 2. The change is, therefore, acceptable.

(b) Action 3.7.D.2.c: Cell electrolyte level less than minimum established design limits with restoration time of 31 days, provided level is above the top of the plates within 8 hours and no evidence of leakage is found within 12 hours. The Footnote to Action 3.7.D.2.c assures the verification of no evidence of leakage is completed regardless of when electrolyte level is restored. In conjunction with these specific Actions for electrolyte level, proposed SR 4.7.C.2.a includes a more restrictive acceptance criteria for monitoring station battery electrolyte level (i.e., "minimum established design limit," which is well above the existing “plates-covered” criterion).

The NRC staff reviewed the proposed change and concurs with the licensee that if the electrolyte level is above the top of the battery plates, but below the minimum established design limit, the battery still has sufficient capacity. The new Actions to restore the level ensure that the cause of the loss of electrolyte level is not due to a leak in the battery casing. In addition, the Station Battery Monitoring and Maintenance Program described in proposed Section 6.8.5, would require actions to equalize and test battery cells that have been discovered with an electrolyte level below the top of the plates.

The licensee stated that the new Action 3.7.D.2.c is added in conjunction with a more restrictive surveillance criterion for station battery electrolyte level (i.e., Action TS 4.7.C.2.a is revised from current Action 4.7.B.2) to require that battery cell level be verified above the "minimum established design limit," which is well above the existing “plates-covered” criterion. The NRC staff concurs with the licensee’s justification that with electrolyte level below the top of the

plates, there is a potential for dryout and plate degradation. Therefore, this more restrictive surveillance criterion and additional Actions for when level is discovered below the plates would represent enhanced assurance of continued battery capability.

The NRC staff finds the proposed change will continue to ensure that battery parameters (maintenance, testing and monitoring) are performed in accordance with the "Battery Monitoring and Maintenance Program" as specified in Specification 6.8.5, meets GDC 17 and 18 requirements, and is consistent with the intent of NUREG-1433, Revision 2. This change is, therefore, acceptable.

(c) Specification 3.7.D.2.e: This Action restricts continued operation with degradation of more than one station battery at any one time to less than 20 hours.

The NRC staff reviewed the proposed specification and concurs with the licensee's justification that if both station batteries are degraded for any parameters discussed above, there is not sufficient assurance that the DC system will be able to perform its intended function. This is because with both B and C station batteries with an out-of-limit parameter, loss of an assumed function for systems that depend upon the batteries is possible. Thus, the NRC staff concurs that the battery parameters be restored to within limits on one battery within 2 hours and this is consistent with TSTF-360, Revision 1. Based on this review, the NRC staff finds the proposed change meets GDC 17 and GDC 18 requirements, is consistent with the intent of NUREG-1433, Revision 2, and is, therefore, acceptable.

(d) Specification 3.7.D.2.f: This specification imposes a 2-hour restoration time for failing to meet any of the other parameter restoration times of Actions 3.7.D.2.a through 3.7.D.2.e. Failing to correct the condition(s) within 2 hours would require the plant to proceed to cold shutdown.

The NRC staff reviewed the proposed specification and finds it consistent with TSTF-360, Revision 1. Based on this review, the NRC staff finds the proposed change conforms to GDC 17 and 18 requirements, is consistent with the intent of NUREG-1433, Revision 2, and is, therefore, acceptable.

(e) Specification 3.7.D.2.g: This specification imposes a 2-hour restoration time for any battery having both cell(s) voltage <2.07 volts and battery float current not within limits, or for any of the new battery parameter restoration times not met. Failing to correct these conditions within 2 hours would require the plant to proceed to cold shutdown.

The licensee stated that if station battery B or C is discovered with one or more battery cell float voltages < 2.07 volts, and float current not within limits, this is indication that battery capacity may not be sufficient to perform the intended functions. Failing to correct these conditions within 2 hours would require the plant to proceed to cold shutdown. This change makes the TSs more restrictive. The NRC staff finds the proposed change conforms to GDC 17 and 18 requirements, is consistent with the intent of NUREG-1433, Revision 2, and is, therefore, acceptable.

(f) Specification 3.7.D.3: This specification imposes a 2-hour restoration time for one station battery that is inoperable for reasons other than addressed by the parameter degradation actions provided.

This specificaion imposes a 2-hour restoration time for one station battery that is inoperable for reasons other than those addressed by the parameter-related degradation actions. The licensee stated that with one station battery inoperable, the battery charger is supplying the DC bus. The 2-hour limit allows sufficient time to effect restoration of an inoperable battery given that the majority of the conditions that lead to battery inoperability (e.g., loss of battery charger, battery cell voltage less than 2.07 V, etc.) are identified in new Specification 3.7.D.2 together with additional specific completion times. Failing to correct this inoperability within 2 hours would require the plant to proceed to cold shutdown. This change is consistent with TSTF-360, Revision 1. The NRC staff finds the proposed change provides adequate assurance of system operability, conforms to GDC 17 and 18 requirements, is consistent with the intent of NUREG-1433, Revision 2, and is, therefore, acceptable.

3.1.8 Revise Frequency of Station Battery Performance Discharge Tests and Add Option to Satisfy Battery Service Test by Modified Performance Discharge Test

The licensee proposed to revise the frequency of station battery performance discharge tests, and to add an option to satisfy battery service test by a modified performance discharge test. The change includes:

(a) The existing SR of Specification 4.7.B.5 requires a station battery capacity discharge test (editorially revised to be referred to as “performance discharge test”) be performed every 24 months, and includes timing for battery replacement. This would be replaced with a proposed new Specification 4.7.C.5, which will require either a performance discharge test, or modified performance discharge test (as defined by IEEE Standard 450) be performed once per 60 months. Battery replacement timing will be deleted from the TSs.

The NRC staff reviewed this proposed change for consistency with IEEE Standard 450 -1995. The frequency for this "performance discharge test,” as per the IEEE Standard, is normally 60 months. If the battery shows degradation, or if the battery has reached 85 percent of its expected life and capacity is <100 percent of the manufacturer's rating, the surveillance frequency is reduced to 12 months. However, if the battery shows no degradation but has reached 85 percent of its expected life, the surveillance frequency is only reduced to 24 months for batteries that retain capacity $\geq$100 percent of the manufacturer's rating. According to IEEE Standard 450, degradation is indicated when the battery capacity drops by more than 10 percent relative to its capacity on the previous performance test, or when it is 10 percent below the manufacturer's rating. The details of what constitutes "degradation" are provided in the licensee’s proposed Bases. The NRC staff finds the proposed Bases consistent with the format and content of NUREG-1433. The licensee further stated that these frequencies are appropriate for trending station battery capacity over the expected life of the station batteries. Accordingly, the NRC staff finds the proposed change conforms to GDC 17 and 18 requirements, is consistent with the intent of NUREG-1433, Revision 2, and is, therefore, acceptable.

Along with the above proposed change, the licensee also requested a one-time deferral of the implementation of Specification 4.7.C.5.b for battery C by adding a footnote to defer the implementation until the following refueling outage (1 R20) for station battery C. However, this request was withdrawn in the March 31, 2004, supplemental letter.

> (b) The current station battery service test, required every 24 months (current Specification 4.7.B.5.c is being renumbered to Specification 4.7.C.4.a), is provided with a proposed new option. In lieu of a battery service test, the proposed change allows a modified performance discharge test to satisfy the service test requirement.

The licensee stated that since the modified performance discharge test envelopes the duty cycle of the service test, it is appropriate to allow this substitution. This change is consistent with TSTF-360; the NRC staff finds the proposed change conforms to GDC 17 and 18 requirements, is consistent with the intent of NUREG-1433, Revision 2, and is, therefore, acceptable.

3.1.9 Eliminate Duplicative Diesel Generator Starting Battery Testing

The licensee proposed editorial changes to the SR for diesel generator starting batteries in current Specification 4.7.B to eliminate duplicative requirements. Specifically, station battery surveillances are taken from the current Specification 4.7.B, and will be presented in the new Specification 4.7.C, appropriate renumbering is done in Specification 4.7.B. Also, Specification 4.7.B.1.a requires a weekly verification that diesel generator starting battery plates are fully covered with electrolyte. This surveillance is repeated with a frequency of quarterly (Specification 4.7.B.2.a) and annually (Specification 4.7.B.3.a). The licensee proposed to delete the quarterly and annual frequencies as an editorial change, since the weekly requirement (Specification 4.7.B.1.a) continues to satisfy the quarterly and annual frequency requirements.

The NRC staff agrees that this change is editorial in nature. Based on this review, the NRC staff finds the proposed change conforms with GDCs 17 and 18, is consistent with the intent of NUREG-1433, Revision 2, and is, therefore, acceptable.

3.1.10 Enhance Presentation of Required Buses, Panels, MCCs [Motor Control Centers], and Distribution Centers

The licensee proposed to revise the presentation of the current Specification 3.7.A that lists the auxiliary electrical power buses, panels, MCCs, and distribution centers required to be energized. The proposed change is an editorial enhancement to present these components more consistently with actual as-built terminology, and enhance the presentation format. No changes in actual requirements are proposed to this section. The NRC staff agrees that the change is editorial in nature, and therefore, is acceptable.

3.2 Evaluation Summary

The proposed changes to the DC electrical power subsystems specifications in Sections 3.7 and 4.7, and the addition of a new TS Section 6.8.5, "Battery Maintenance and Monitoring Program," except for plant-specific differences, are consistent with the seven areas (a), (b), (c), (d), (e), (f), and (g) in Section 2.1 above. These changes were previously approved for

TSTF-360, Revision 1, as incorporated in NUREG-1433, "Standard Technical Specifications, BWR/4 Plants," Revision 2. The proposed changes do not affect the current design requirements and meet GDC 17 and 18 requirements. Each of these proposed changes has been evaluated in accordance with the requirements of 10 CFR 50.36, and determined not to adversely affect nuclear safety or continued safe plant operations. Therefore, the proposed changes are acceptable.

3.3 Review of Proposed Bases Changes

The NRC staff reviewed the associated Bases text provided with the licensee's application, as supplemented, against the Bases text that was accepted by the NRC staff during the review of TSTF-360, Revision 0, and TSTF-360, Revision 1. The NRC staff finds the licensee's proposed Bases text to contain wording that is generally consistent with that of the NRC-approved wording in TSTF-360, Revision 1. Consequently, the NRC staff has no objection to the licensee's proposed Bases text.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State official was notified of the proposed issuance of the amendment. The State official had no comments (see letter, K. W. Tosch to NRC, March 29, 2004; Accession No. ML041130265).

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. 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 (68 FR 28845). 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.

6.0 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.

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