

10 CFR 50.90

October 31, 2017

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

R. E. Ginna Nuclear Power Plant
Renewed Facility Operating License No. DPR-18
NRC Docket No. 50-244

Subject: License Amendment Request to Revise Technical Specifications
Surveillance Requirement SR 3.8.4.3, "DC Sources – MODES 1, 2, 3, and
4," to Allow for a Modified Performance Discharge Test

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) requests an amendment to the Technical Specifications (TS) Surveillance Requirement (SR) 3.8.4.3, "DC Sources – MODES 1, 2, 3, and 4," for R. E. Ginna Nuclear Power Plant (Ginna).

The proposed change will allow the use of a consistent battery testing technique in order to provide consistent data for trending battery performance. The proposed change is based on guidance provided in the Institute of Electrical and Electronics Engineers (IEEE) Standard 450-2010, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," which is endorsed by Regulatory Guide 1.129, Revision 3, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants."

The proposed change has been reviewed by the Ginna Plant Operations Review Committee in accordance with the requirements of the EGC Quality Assurance Program.

EGC requests approval of the proposed amendment by October 22, 2018. Once approved, the amendment shall be implemented, prior to the refueling outage to avoid repeated battery performance discharge testing.

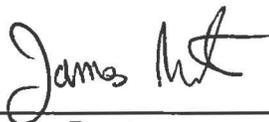
In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), EGC is notifying the State of New York of this application for license amendment by transmitting a copy of this letter and its attachments to the designated State Official.

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If you should have any questions concerning this letter, please contact Jessie Hodge at (610) 765-5532.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 31th day of October 2017.

Respectfully,



James Barstow
Director - Licensing and Regulatory Affairs
Exelon Generation Company, LLC

- Attachments:
1. Evaluation of Proposed Changes
 2. Markup of Technical Specifications Pages
 3. Retyped Version of Technical Specifications Pages
 4. Markup of Technical Specifications Bases Pages (For Information Only)

cc:	USNRC Region I, Regional Administrator	w/ attachments
	USNRC Senior Resident Inspector, Ginna	"
	USNRC Project Manager, Ginna	"
	A. L. Peterson, NYSERDA	"

ATTACHMENT 1

Evaluation of Proposed Changes

R. E. Ginna Nuclear Power Plant

Renewed Facility Operating License No. DPR-18

Docket No. 50-244

**Subject: License Amendment Request to Revise Technical Specifications
Surveillance Requirement SR 3.8.4.3, "DC Sources – MODES 1, 2, 3, and 4,"
to Allow for a Modified Performance Discharge Test**

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- 3.0 TECHNICAL EVALUATION
- 4.0 REGULATORY ANALYSIS
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1.0 SUMMARY DESCRIPTION

This evaluation supports a request to amend Operating License No. DPR-18 for the R. E. Ginna Nuclear Power Plant (Ginna).

The proposed change will add the words "or a modified performance discharge test" to DC Sources Surveillance Requirement (SR) 3.8.4.3. The proposed change is based on guidance provided in the Institute of Electrical and Electronics Engineers (IEEE) Standard 450-2010, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," (Reference 1) which is endorsed by Regulatory Guide 1.129, Revision 3, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants" (Reference 2).

2.0 DETAILED DESCRIPTION

The current Technical Specification (TS) requires the DC System Class 1E station batteries to undergo separate service and performance discharge tests to verify the batteries capability to satisfy design duty cycle requirements and determining the batteries capacity percentages respectively.

The proposed change will add the words "or a modified performance discharge test" to SR 3.8.4.3. The current SR 3.8.4.2 note allows the substitution of the SR 3.8.4.3 performance discharge test for the battery service test contained in SR 3.8.4.2. The SR 3.8.4.3 will be modified to allow the use of the performance discharge test or the modified performance discharge test. This change will allow the flexibility of conducting either the performance discharge test, consistent with the current TS, or the modified performance discharge test, consistent with NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," (References 3 and 4) requirements, both in lieu of the battery service test.

At the time of conversion to the revised Standard TS, the Ginna TS requirements for battery testing were based on IEEE Standard 450-1975, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations." The 1975 version of IEEE Standard 450 did not include guidance for substitution of the performance discharge test for the battery service test, although Ginna TS did include this allowance. The basis for allowing the substitution of the performance test for the service test as stated in the NRC Safety Evaluation Report (SER) for Amendment No. 61, dated February 13, 1996, remains valid. The NRC SER for Amendment No. 61 states that the performance test can substitute for the service test. Therefore, substitution of the performance discharge test for the battery service test was determined to be acceptable.

The 1995 version of IEEE Standard 450 specifies that the modified performance test can be performed in lieu of the battery service test. The IEEE Standard 450-1995 (superseded by a 2010 revision) guidance is consistent with the NRC-approved TSTF-360, which allows substituting a modified performance test for the service test. IEEE Standard 450 states that the performance discharge test and modified performance discharge test are both acceptable means of conducting the battery capacity verification testing. Therefore, it is proposed that SR 3.8.4.3 be reworded to include the modified performance discharge test.

3.0 TECHNICAL ANALYSIS

The IEEE Standard 450-2010 allows the use of a new modified performance discharge test, which tests the battery capacity and the ability of the battery to satisfy the designed duty cycle. A modified performance discharge test uses a constant discharge current modified by increasing the current to bound every portion of the battery's duty cycle. This test discharges the battery with a current equal to the manufacturer's rating for the selected test length (like a performance discharge test), but is modified to encompass the larger portions of the battery's duty cycle which is the initial first minute high-rate discharge for Ginna. The battery terminal voltage is monitored throughout the modified performance discharge test and the test ends when voltage falls to its minimum test voltage. Battery capacity can then be calculated using the time it took the test to reach the battery's minimum terminal voltage. This testing methodology allows for the modified performance discharge test to be used in lieu of a battery service test and/or a performance discharge test at any time.

The NRC issued Regulatory Guide 1.129, Revision 3 in September 2013, which endorsed the use of IEEE Standard 450-2010. The guidance explicitly references the IEEE standard's allowance for the use of a modified performance discharge test in lieu of a battery service test or a performance discharge test, stating that the modified performance discharge test is "of sufficient magnitude and duration to envelop every portion of the battery duty cycle, the service test, and the performance test."

Section C.5 of the Regulatory Guide provides the requirements needed for nuclear power generating station Class 1E batteries to be acceptable for the use of a modified performance discharge test in lieu of a battery service test or a performance discharge test at any time. The battery is acceptable if (1) it delivers a test capacity of greater than 80 percent, and (2) there is no indication of degradation as indicated in Section 6.3 of IEEE Standard 450-2010.

The last performance discharge tests of Ginna's Class 1E station batteries were performed in May 2014 after installation, with test results determining battery capacities to be 104.6% for Battery A and 100.8% for Battery B with no signs of degradation as described in Section 6.3 of IEEE Standard 450-2010. Therefore, Ginna's Class 1E station batteries meet the acceptability requirements of Section C.5 of the Regulatory Guide.

The NRC also issued Revision 4.0 of NUREG-1431, which endorses revised Standard Technical Specifications for Westinghouse Plants. The document allows the use of a modified performance discharge test to verify battery capacity (SR 3.8.6.6), in lieu of a battery service test to verify the battery's capability to satisfy the designed duty cycle (SR 3.8.4.3), to determine operability of the Class 1E batteries and the station's DC distribution system.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The following NRC requirements and guidance document are applicable to the review of the proposed change.

The proposed change has been evaluated to determine whether applicable regulations and requirements continue to be met. EGC has determined that the proposed change does not require any exemptions or relief from the applicable regulatory requirements. The following current applicable regulations and regulatory requirements were reviewed in making this determination:

Title 10 of the Code of Federal Regulations (10 CFR) Part 50 Appendix A, General Design Criterion (GDC) 17, "Electric power systems," requires, in part, that nuclear power plants have onsite and offsite electric power systems to permit the functioning of Structures, Systems, and Components (SSCs) that are important to safety. The onsite system is required to have sufficient independence, redundancy, and testability to perform its safety function, assuming a single failure.

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.

Regulatory Guide 1.129, Revision 3, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants," September 2013, provides guidance with respect to the maintenance, testing, and replacement of vented lead-acid storage batteries in nuclear power plants. This Regulatory Guide endorses, in part, the IEEE Standard 450-2010, "IEEE Recommended Practice for Maintenance, Testing and Replacement of Vented Lead-Acid Batteries for Stationary Applications" (ML13170A112).

4.2 Precedent

The following industry precedent is applicable to the R. E. Ginna Nuclear Power Plant license amendment request:

H. B. Robinson Steam Electric Plant, Unit No. 2 – Issuance of an Amendment on DC Sources – Operating (TAC NO. MC5908), dated August 25, 2005. (ML052200295)

4.3 No Significant Hazards Consideration

Exelon Generation Company, LLC (EGC), proposes changes to the TS, Appendix A of Renewed Facility Operating License No. DPR-18 for Ginna. The proposed change will add the words "or a modified performance discharge test" to SR 3.8.4.3, "DC Sources – MODES 1, 2, 3, and 4."

An evaluation of the proposed change has been performed in accordance with 10 CFR 50.91(a)(1) regarding no significant hazards considerations using the standards in 10 CFR 50.92(c). A discussion of these standards as they relate to this amendment request follows:

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

Response: No.

The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed change will continue to ensure that the DC system is tested in a manner that will verify operability. Performance of the required system surveillances, in conjunction with the applicable operational and design requirements for the DC system, provide assurance that the system will be capable of performing the required design functions for accident mitigation and also that the system will perform in accordance with the functional requirements for the system as described in the Updated Final Safety Analysis Report for Ginna. This change is in accordance with IEEE Standard 450-2010, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," which has been endorsed by NRC Regulatory Guide 1.129, Revision 3, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants." This ensures that the rate of occurrence and consequences of analyzed accidents will not change. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

The proposed change does not create the possibility of a new or different kind of accident from any previously evaluated. The proposed surveillance requirement change will continue to ensure that the DC system and in particular the batteries are tested in a manner that will verify operability. No physical changes to the Ginna systems, structures, or components are being implemented. There are no new or different accident initiators or sequences being created by the proposed TS change. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No.

The proposed change does not involve a significant reduction in the margin of safety. The proposed DC system surveillance requirement change provides appropriate and applicable surveillances for the DC system. The proposed change to surveillance requirements for the DC system will continue to ensure system operability. Therefore, this change does not affect any margin of safety for Ginna.

Based on the above, EGC concludes that the proposed amendment does not involve a 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.

4.4 Conclusions

In conclusion, based on the considerations discussed above, (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 approval of the proposed change will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

A review 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. However, the proposed amendment does not involve (i) a significant hazards consideration, (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 categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. IEEE Standard 450-2010, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," dated February 25, 2011.
2. Regulatory Guide 1.129, Revision 3, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants," dated September 2013
3. NUREG-1431, Revision 4.0, "Standard Technical Specifications, Westinghouse Plants," Volume 1, Specifications
4. NUREG-1431, Revision 4.0, "Standard Technical Specifications, Westinghouse Plants," Volume 2, Bases

ATTACHMENT 2

Markup of Technical Specifications Pages

R. E. Ginna Nuclear Power Plant

Renewed Facility Operating License No. DPR-18

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Revised Technical Specifications Pages

TS Pages

3.8.4-2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ 129 V on float charge.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.2	<p>-----</p> <p style="text-align: center;">- NOTE -</p> <p>1. SR 3.8.4.3 may be performed in lieu of SR 3.8.4.2.</p> <p>2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4.</p> <p>-----</p> <p>Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.3	<p>-----</p> <p style="text-align: center;">- NOTE -</p> <p>This Surveillance shall not be performed in MODE 1, 2, 3, or 4.</p> <p>-----</p> <p>Verify battery capacity is $\geq 80\%$ of the manufacturer's rating when subjected to a performance discharge test.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>12 months when battery shows degradation, or has reached 85% of expected life with capacity < 100% of manufacturer's rating</p> <p><u>AND</u></p> <p>24 months when battery has reached 85% of the expected life with capacity $\geq 100\%$ of manufacturer's rating</p>

or a modified performance discharge test



ATTACHMENT 3

Retyped Version of Technical Specifications Pages

R. E. Ginna Nuclear Power Plant

Renewed Facility Operating License No. DPR-18

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ 129 V on float charge.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.2	<p style="text-align: center;">----- - NOTE - -----</p> <p>1. SR 3.8.4.3 may be performed in lieu of SR 3.8.4.2.</p> <p>2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4.</p> <p style="text-align: center;">-----</p> <p>Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.</p>	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.3	<p style="text-align: center;">----- - NOTE - -----</p> <p>This Surveillance shall not be performed in MODE 1, 2, 3, or 4.</p> <p style="text-align: center;">-----</p> <p>Verify battery capacity is $\geq 80\%$ of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p style="text-align: center;"><u>AND</u></p> <p>12 months when battery shows degradation, or has reached 85% of expected life with capacity < 100% of manufacturer's rating</p> <p style="text-align: center;"><u>AND</u></p> <p>24 months when battery has reached 85% of the expected life with capacity $\geq 100\%$ of manufacturer's rating</p>

ATTACHMENT 4

Markup of Technical Specifications Bases Pages (For Information Only)

R. E. Ginna Nuclear Power Plant

Renewed Facility Operating License No. DPR-18

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Revised Technical Specifications Bases Pages

TS Bases Pages

B3.8.4-7

criteria. The test is intended to determine overall battery degradation due to age and usage.

A battery should be replaced if its capacity is below 80% of the manufacturer rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements.

The Frequency for this SR is in accordance with the Surveillance Frequency Program when the battery is < 85% of its expected life with no degradation and 12 months if the battery shows degradation or has reached 85% of its expected life with a capacity < 100% of the manufacturer's rating. When the battery has reached 85% of its expected life with capacity \geq 100% of the manufacturer's rating, the Frequency becomes 24 months. Battery degradation is indicated when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is \geq 10% below the manufacturer rating. These Frequencies are considered acceptable based on the testing being performed in a conservative manner relative to the battery life and degradation. This ensures that battery capacity is adequately monitored and that the battery remains capable of performing its intended function. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

This SR is modified by a Note stating that this SR shall not be performed in MODE 1, 2, 3, or 4. The reason for the Note is that during operation in these MODES, performance of this SR could cause perturbations to the electrical distribution system and challenge safety systems.

A battery modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain greater than or equal to the minimum battery terminal voltage specified in the battery performance discharge test.

A modified performance discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.4.3.