CR

Entergy

Entergy Nuclear Operations, Inc.
Vermont Yankee
320 Governor Hunt Rd.
Vernon, VT
802-257-7711

Christopher J. Wamser
Site Vice President

BVY 13-019

March 19, 2013

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

SUBJECT: License Amendment Request; Changes to 10 CFR 50.63 Licensing Basis, Supplement 1
Vermont Yankee Nuclear Power Station
Docket No. 50-271
License No. DPR-28

REFERENCES:
1. Letter, Entergy Nuclear Operations, Inc. to USNRC, "License Amendment Request; Changes to 10CFR50.63 Licensing Basis," BVY 12-084, dated December 21, 2012
2. Letter, USNRC to Entergy Nuclear Operations, Inc., "Vermont Yankee Nuclear Power Station -Request for Additional Information Regarding Change to Licensing Basis for Station Blackout Diesel Generator (TAC NO. MF0422)," NVY 13-014, dated February 21, 2013

Dear Sir or Madam:

In Reference 1, Entergy Nuclear Operations, Inc. (Entergy) submitted a request for an amendment to the 10 CFR 50.63 (Station Blackout) licensing basis for Vermont Yankee Nuclear Power Station. This letter provides supplemental information to address the Reference 2 request for additional information (RAI). Attachment 1 to this submittal provides Entergy's response to the RAI.

This supplement to the original license amendment request does not change the scope or conclusions in the original application, nor does it change Entergy's determination of no significant hazards consideration.

Attachment 2 of this letter contains a new regulatory commitment.

Should you have any questions concerning this letter or require additional information, please contact Mr. Robert Wanczyk at 802-451-3166.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 19, 2013.

Sincerely,

CJW/plc

Attachments: 1. Response to Request for Additional Information
2. List of Regulatory Commitments

cc: William M. Dean
Regional Administrator, Region 1
U.S. Nuclear Regulatory Commission
2100 Renaissance Blvd, Suite 100
King of Prussia, PA 19406-2713

Mr. Richard V. Guzman, Project Manager
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Stop O-8-C2
Washington, DC 20555

USNRC Resident Inspector
Entergy Nuclear Vermont Yankee, LLC
320 Governor Hunt Road
Vernon, Vermont 05354

Mr. Christopher Recchia
Commissioner
Vermont Department of Public Service
112 State Street – Drawer 20
Montpelier, Vermont 05620-2601

Attachment 1

Vermont Yankee Nuclear Power Station

Response to Request for Additional Information

Response to Request for Additional Information (RAI)

By letter dated December 21, 2012 (Agencywide Documents Access and Management System Accession No. ML12362A041), Entergy Nuclear Operations, Inc. (Entergy or the licensee) submitted a license amendment request (LAR) to revise the licensing basis relative to how Vermont Yankee Nuclear Power Station (VYNPS) satisfies the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.63, "Loss of all alternating current power." Entergy proposes to replace the Vernon Hydroelectric Station with an onsite emergency diesel generator (EDG) as the alternate alternating current (AAC) power source providing acceptable capability to withstand a station blackout (SBO) under 10 CFR 50.63(c)(2). The proposed change would involve revisions to the VYNPS facility and procedures described in the Updated Final Safety Analysis Report. The NRC staff is reviewing the LAR and has determined that additional information as requested below will be needed to support its review.

RAI 1

In the LAR, the licensee stated:

> **In Reference 7.a, the NRC accepted the determination that VY is categorized as an 8 hour coping plant with a target EDG reliability of 0.95. No changes to the station coping duration or credited EDG reliability are proposed in the amendment.**

Based on the proposed design change, provide a summary of your detailed Regulatory Guide (RG) 1.155, "Station Blackout," analysis, considering the most up-to-date data (e.g., current grid reliability, loss of offsite power events, EDG reliability, etc.), showing the minimum specified duration that Vermont Yankee should be required to mitigate the consequences of an SBO event.

Response

Vermont Yankee (VY) will update the coping duration analysis using the most up-to-date data. VY will submit a summary of the analysis by May 15, 2013.

RAI 2

In the LAR, the licensee stated that:

> **Once every refueling outage, a timed start will be performed to demonstrate that the AAC power source can be started and aligned to either safety Bus 3 or safety Bus 4 within one (1) hour ...**
>
> **Once the AAC power source is energized up to 3V4 [the feeder circuit breaker for the Vernon Hydroelectric Station tie line], it takes very little time to align loads from the control room (less than 10 minutes).**

The regulatory guidance in Section B.12, Appendix B, of NUMARC 87-00 Revision 1 as endorsed by RG 1.155, states that: "Unless otherwise governed by technical specifications, the AAC system shall be demonstrated by initial test to be capable of powering required shutdown equipment within one hour of a station blackout event." Given the above, explain how the licensee demonstrates that the AAC system can power

required shutdown equipment within one-hour of a station blackout event (not just be aligned).

Response

Installation of the station blackout diesel generator (SBO DG) will not be completed by the end of the upcoming VY refueling outage (RFO 30). Once installation is complete, the initial test, as described in Reference 1, to demonstrate that power from the SBO DG can be made available up to circuit breaker 3V4 within one hour will be performed while the plant is at power. A timed start and load test of the SBO DG using station shutdown equipment requires a safety bus (bus 3 or bus 4) to be stripped of its operating loads prior to the test. This is impractical while the plant is at power because stripping the bus loads is a high-risk evolution that challenges plant operators and requires entry into Technical Specification (TS) Limiting Condition for Operation (LCO) that requires the plant to be in the cold shutdown condition within 24 hours (TS 3.10.B.1). VY believes that entering a 24 hour shutdown LCO solely to test the capability of the non-safety related SBO DG to power shutdown equipment is unnecessary as this could challenge plant equipment and operators. As discussed in Reference 1, VY will demonstrate by test during RFO 31 that the SBO DG is capable of powering shutdown equipment within one hour of a station blackout event by performing a timed start of the SBO DG, aligning the SBO DG to safety bus 3 or bus 4 and starting the largest available motor on the safety bus to which it is aligned. RFO 31 is the first refueling outage scheduled following installation of the SBO DG.

VY currently demonstrates through performance of the Vernon Tie surveillance test that VY can energize a safety bus and load it from the AAC source, once power is available up to breaker 3V4. It typically takes less than one minute to restore power to a safety bus once the AAC power source is available up to breaker 3V4. As discussed in Reference 2, the time required to manually load a safety bus is governed by system power requirements, not the source of power to the bus and therefore, there is no time restriction on loading a bus after closure of the SBO DG supply breaker. Energization of a safety bus from the SBO DG requires the closure of two circuit breakers (breaker 3V4 and either breaker 3V or 4V) from the VY Control Room. The wiring and control for breakers 3V, 4V and 3V4 are not affected by the installation of the new SBO DG; therefore, the time to close the breakers is unaffected by the installation. Manual start of the SBO DG would be accomplished as soon as the operator has diagnosed that a loss of offsite power has occurred, an emergency diesel generator has failed to start and the Vernon Tie Line is unavailable. Closure of the two breakers would be initiated as soon as the operator had verified that the SBO DG has started by verifying rated output voltage exists on the Vernon Tie Line. The SBO scenario is practiced in simulator training.

VY believes that the past performance of the Vernon Tie surveillance tests and proposed SBO DG initial testing plan provides reasonable assurance that the SBO DG will be capable of powering required shutdown equipment within one hour of a station blackout event.

REFERENCES

1. Letter, Entergy Nuclear Operations, Inc. to USNRC, "License Amendment Request; Changes to 10CFR50.63 Licensing Basis," BVY 12-084, dated December 21, 2012

1. Letter, Vermont Yankee Nuclear Power Corporation to USNRC, "Additional Information in Support of Vermont Yankee Compliance with the Station Blackout Rule," BVY 93-94, dated September 2, 1993

Attachment 2

Vermont Yankee Nuclear Power Station

List of Regulatory Commitments

List of Regulatory Commitments

This table identifies actions discussed in this letter for which Entergy commits to perform. Any other actions discussed in this submittal are described for the NRC's information and are **not** commitments.

COMMITMENT	TYPE (Check one)		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
Provide a summary of the detailed Regulatory Guide (RG) 1.155, "Station Blackout," analysis, considering the most up-to-date data (e.g., current grid reliability, loss of offsite power events, EDG reliability, etc.), showing the minimum specified duration that Vermont Yankee should be required to mitigate the consequences of an SBO event.	x		May 15, 2013