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April 14, 2006
BVY 06-038

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

Reference: 1) NRC Generic Letter 2006-02, Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power, dated February 1, 2006.

2) Entergy letter to USNRC, Response to Generic Letter 2006-02, Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power, BVY 06-032, dated April 3, 2006.

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Response to Generic Letter 2006-02, Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power

In Reference (2), Vermont Yankee (VY) provided an initial response to Generic letter 2006-02. Because much of our staff was involved with power uprate related activities, only a partial response was submitted. This submittal supercedes Reference 2 in its entirety and is VY's complete response to Generic Letter 2006-02. This submittal is being provided pursuant to 10CFR50.54(f).

Generic Letter 2006-02 discusses compliance with General Design Criterion (GDC) 17 in several locations. It should be noted that Vermont Yankee was designed and constructed based on the 1967 draft GDC.

Some of the questions in Generic Letter 2006-02 seek information, procedures and activities concerning grid reliability for which Vermont Yankee does not have first-hand knowledge. Vermont Yankee has not independently verified all information provided by the following organizations:

- *Independent System Operator of New England*
- *Vermont Electric Power Company*

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There are no Regulatory Commitments made by Vermont Yankee in this letter.

If you should have any questions concerning this submittal, please contact Mr. James M. DeVincentis at (802)258-4236.

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

Executed on April 14, 2006.

Sincerely,

Jay K. Thayer
Site Vice President
Vermont Yankee Nuclear Power Station

Attachment (1)

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Use of protocols between the NPP licensee and the TSO, ISO, or RC/RA and the use of analysis tools by TSOs to assist NPP licensee in monitoring grid conditions to determine the operability of offsite power systems under plant TS.

GDC 17, 10 CFR Part 50, Appendix A, requires that licensees minimize the probability of the loss of power from the transmission network given a loss of the power generated by the nuclear power unit(s).

Vermont Yankee (VY) Offsite Power Sources Description:

Three 345 KV transmission lines and one 115 kV transmission line connect to various transmission systems operated by Independent System Operator-New England (ISO-NE) and its Local Control Centers (LCCs). The TSO is ISO-NE, the regional transmission operator. ISO-NE and its LCC's employ contingency monitoring programs (Real-Time Contingency Analysis Programs) for these connecting transmission lines. For the 345 KV and 115 kV transmission lines, Vermont Yankee (VY) normally interfaces with Vermont Electric Company (VELCO) LCC. VY's 115 kV and 345 kV switchyards are owned by VY and located inside its owner controlled area.

VY has two qualified offsite power sources, as described in VY's Technical Specifications (TS). VY's Updated Final Safety Analysis Report (UFSAR) describes to what extent the offsite power sources were reviewed to the draft GDCs. These power sources are described as follows:

Immediate Access Source: The 345 kV transmission source, via the autotransformer, 115 kV bus, and the startup transformers, that is capable of powering from the offsite transmission network to the onsite emergency safeguard buses (4 kV buses 3 and 4). ISO-NE and the VY associated LCC employ real-time contingency analysis programs for the VY 115 kV bus, which powers, via the startup transformers, the onsite emergency safeguard buses.

Delayed Access Source: The 345 kV transmission source, via the main transformer and the auxiliary transformer, that is capable of powering from the offsite transmission network to the onsite emergency safeguard buses. Because this source is manually aligned per operating procedures with the VY associated LCC's permission by isolating the generator, opening the VY generator's no-load disconnect and back-feeding the main transformer from the 345 kV system, the real-time contingency monitor programs are not applicable to determine inoperability for contingencies.

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1. Use of protocols between the NPP licensee and the TSO, ISO, or RC/RA to assist the NPP licensee in monitoring grid conditions to determine the operability of offsite power systems under plant TS.	
1(a). Do you have a formal agreement or protocol with your TSO?	Response: Yes. VY has formal agreements with the Transmission Owner (Interconnection Agreement) and the TSO (Market Participant Service Agreement). The Transmission Owner and TSO agreements require all parties to operate per ISO-NE procedures and documents, therefore the ISO-NE procedures and documents are considered part of the formal agreements. For VY, the TSO and its LCC provide for the monitoring of grid conditions to determine the operability of the immediate access source.
1(b). Describe any grid conditions that would trigger a notification from the TSO to the NPP licensee and if there is a time period required for the notification	Response: TSO makes notifications as soon as practical upon identification of any of the following: 1) Overall system wide warning or alert conditions. 2) If the computerized contingency monitoring program (Real-Time Contingency Analysis) determines that the immediate access source could degrade below a value specified by VY. 3) In the event that LCC's and ISO-NE's control center's Real-time On-line AC Contingency Monitor Programs become unavailable. 4) A local system configuration, which would cause VY to become unstable in the event of a potential transmission system contingency. 5) Predetermined line outages, which require VY or the TSO to take action to ensure unit stability in the event of an N–2 system contingency (e.g. - loss of another line plus a stuck breaker).

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1(c). Describe any grid conditions that would cause the NPP licensee to contact the TSO. Describe the procedures associated with such a communication. If you do not have procedures, describe how you assess grid conditions that may cause the NPP licensee to contact the TSO.	Response: VY has procedures that would notify the TSO and/or LCC. Notifications include but are not limited to: • 115kV line voltage outside a VY specified range, • 345kV line voltage outside the load schedule, • VAR or turbine vibration limit threatened or exceeded, • Changes in the main generator's voltage regulator operating mode, • Emergent switchyard work, • Unexpected and automatic switchyard breaker cycling, • Unexpected 115kV and/or 345kV alarms that do not clear, • Loss of offsite power, • Coordination of capacitor bank operation and EDG testing, • Planned and unplanned plant output changes.
1(d). Describe how NPP operators are trained and tested on the use of the procedures or assessing grid conditions in question 1(c).	Response: VY licensed operators are provided training (classroom and simulator) and are tested on grid conditions. Training topics include but are not limited to: • 115kV and 345kV yard operation, • Electrical theory including distribution and operating procedures, • Loss of Normal Power (LNP), • Restoration of off site power, • Abnormal operating procedures including LNP and major grid disturbances, • Application of TS to offsite power availability, • Response to station alarms and use of alarm response procedures.

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1(e). If you do not have a formal agreement or protocol with your TSO, describe why you believe you continue to comply with the provisions of GDC 17 as stated above, or describe what actions you intend to take to assure compliance with GDC 17.	Response: Not Applicable. As previously stated, VY has a formal agreement with ISO-NE. VY's UFSAR describes to what extent the offsite power sources were reviewed to the draft GDCs.
1(f). If you have an existing formal interconnection agreement or protocol that ensures adequate communication and coordination between the NPP licensee and the TSO, describe whether this agreement or protocol requires that you be promptly notified when the conditions of the surrounding grid could result in degraded voltage (i.e., below TS nominal trip setpoint value requirements; including NPP licensees using allowable value in its TSs) or LOOP after a trip of the reactor unit(s).	Response: As previously stated, VY has a formal agreement with ISO-NE. These agreements require the TSO to notify VY as soon as practicable, upon receipt of a potential 115kV post-VY-trip degraded voltage alarm.

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1(g). Describe the low switchyard voltage conditions that would initiate operation of plant degraded voltage protection.	Response: Degraded grid undervoltage relays sense voltage at each emergency safeguard bus to protect safety related loads from sustained low voltage. These relays are set at approximately 89% of 4.16 kV. The 115 kV system post-VY-trip voltage limit is 100% of 115 kV. Station voltage regulation analyses demonstrate that, assuming a 115 kV bus voltage above the post-VY-trip voltage limit and maximum post accident loading on the startup transformers, voltage is adequate for operation of all emergency loads. Voltage will recover to above the degraded grid relay reset value assuming worst-case tolerance on the relay and station loads will not separate from offsite power. If 115 kV system voltage is less than the post-VY-trip voltage limit, voltage may not be acceptable on the emergency safeguard buses and voltage may not recover to above the degraded grid relay reset values with maximum post accident loading on the startup transformers. If a LOCA signal is present, the degraded grid relays are designed to separate the emergency safeguard buses from offsite power in this event. If post-VY-trip contingency voltage is predicted by the real-time contingency monitoring program (Real-Time Contingency Analysis) to be less than post-VY-trip voltage limit, the TSO notifies VY that post-VY-trip voltage may not be adequate on the VY 115 kV bus. VY would declare the immediate access source "inoperable" and enter the applicable TS action statement.

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2. Use of criteria and methodologies to assess whether the offsite power system will become inoperable as a result of a trip of your NPP.	
2(a). Does your NPP's TSO use any analysis tools, an online analytical transmission system studies program, or other equivalent predictive methods to determine the grid conditions that would make the NPP offsite power system inoperable during various contingencies? If available to you, please provide a brief description of the analysis tool that is used by the TSO.	Response: Yes. LCCs employ Real-Time Contingency Analysis Programs for the VY immediate access source. The program and related actions are summarized as follows. The Program utilizes real-time transmission system information and VY unit-specific shutdown loads and minimum voltage requirements. The program creates a real-time network model starting with bus/branch connectivity, branch impedances and ratings, and steady state generator models. The program then superimposes real-time switch and breaker status to determine network topology. Real-time generation and bus loads are also applied to this model. Statistical techniques are used to resolve tele-metering inconsistencies. The result forms the basis upon which contingent events (contingencies) are tested. A pre-defined list of contingencies includes loss of each generator (including VY) and transmission events. Results of the VY contingency (loss of VY and transfer of station and accident loads to the 115kV system) are automatically compared to VY 115 kV system post-trip voltage limit. If the VY trip contingency violates the VY 115 kV post-trip voltage limit, alarms are generated and VY would be notified. The ISO-NE Real-Time Contingency Analysis Program would be used upon loss of the VY associated LCC capability. The ISO-NE program operates similar to the LCC except the VY contingency is the trip of the unit only.
2(b). Does your NPP's TSO use an analysis tool as the basis for notifying the NPP licensee when such a condition is identified? If not, how does the TSO determine if conditions on the grid warrant NPP licensee notification?	Response: Yes. As discussed above in response 2(a), TSO uses a real-time analysis tool to notify VY of abnormal transmission system conditions that would impact the immediate access source.

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2(c). If your TSO uses an analysis tool, would the analysis tool identify a condition in which a trip of the NPP would result in switchyard voltages (immediate and/or long-term) falling below TS nominal trip setpoint value requirements (including NPP licensees using allowable value in its TSs) and consequent actuation of plant degraded voltage protection? If not, discuss how such a condition would be identified on the grid.	Response: Yes. The TSO real-time analysis tool, in conjunction with VY load flow studies, has the capability to determine if the trip of VY would result in a degraded post-VY-trip 115kV system voltage, which would actuate the VY degraded voltage protection logic and initiate separation from an offsite power source upon a VY trip.
2(d). If your TSO uses an analysis tool, how frequently does the analysis tool program update?	Response: The TSO real-time analysis tool calculations are performed for the connecting 345kV and 115 kV transmission lines every 5 minutes at ISO-NE and the VY associated LCC. In addition, real-time system interface limit calculations for the connecting 345kV and 115 kV transmission lines are performed every 30 seconds by ISO-NE.

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2(e). Provide details of analysis tool-identified contingency conditions that would trigger an NPP licensee notification from the TSO.	Response: See response to item 2(a).
2(f). If an interface agreement exists between the TSO and the NPP licensee, does it require that the NPP licensee be notified of periods when the TSO is unable to determine if offsite power voltage and capacity could be inadequate? If so, how does the NPP licensee determine that the offsite power would remain operable when such a notification is received?	Response: For the VY 115 kV bus, ISO-NE has an operating procedure which requires the TSO to notify VY if the TSO's ability to predict the adequacy of post-VY-trip off-site voltage is unavailable. Loss of voltage prediction tools alone has no impact on operability. An impact on operability is considered unlikely because: (i) this analysis capability exists at multiple TSO locations and (ii) there are multiple methods to determine off-site voltage adequacy, both automatic real-time and system operator manual analysis. If TSO had previously determined the grid was in a degraded or stressed condition (i.e., notified VY) and/or if the TSO, based on changing system conditions and their operating experience, determines that a stressed condition has developed during the loss of voltage prediction tools, VY will be notified and the impact on operability would be considered per the operating procedures.
2(g). After an unscheduled inadvertent trip of the NPP, are the resultant switchyard voltages verified by procedure to be bounded by the voltages predicted by the analysis tool?	Response: No. Neither VY nor the TSO validate the real-time analysis tool predicted post-VY-trip voltage value against the actual voltage.

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2(h). If an analysis tool is not available to the NPP licensee's TSO, do you know if there are any plans for the TSO to obtain one? If so, when?	Response: Not applicable for the immediate access source. The TSO has real-time analysis tool presently in use for the connecting 345 kV and 115 kV transmission lines as discussed above.
2(i). If an analysis tool is not available, does your TSO perform periodic studies to verify that adequate offsite power capability, including adequate NPP post-trip switchyard voltages (immediate and/or long-term), will be available to the NPP licensee over the projected timeframe of the study? 2(i)(a). Are the key assumptions and parameters of these periodic studies translated into TSO guidance to ensure that the transmission system is operated within the bounds of the analyses?	Response: Not applicable for the immediate access source. TSO uses a real-time analysis tool as discussed above.

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2(i)(b). If the bounds of the analyses are exceeded, does this condition trigger the notification provisions discussed in question 1 above?	
2(j). If your TSO does not use, or you do not have access to the results of an analysis tool, or your TSO does not perform and make available to you periodic studies that determine the adequacy of offsite power capability, please describe why you believe you comply with the provisions of GDC 17 as stated above, or describe what compensatory actions you intend to take to ensure that the offsite power system will be sufficiently reliable and remain operable with high probability following a trip of your NPP.	Response: Not applicable. The TSO has a real-time analysis tool for the connecting 345 kV and 115 kV transmission lines and provides results that verify post-VY-trip operability of the immediate access source. Since the VY generator is out-of-service when the delayed access source is used, the post-VY-trip contingency is not applicable. The TSO's real-time contingency monitoring results for the VY 345 kV bus verify the operability of the delayed access source. The delayed source is analyzed for a minimum of approximately 98.5% of 345 KV, which is below the LCC's acceptable 345 kV system voltage of approximately 99.1% of 345 KV.

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3. Use of criteria and methodologies to assess whether the NPP's offsite power system and safety-related components will remain operable when switchyard voltages are inadequate.	
3(a). If the TSO notifies the NPP operator that • a trip of the NPP, or • the loss of the most critical transmission line or • the largest supply to the grid would result in switchyard voltages (immediate and/or long-term) below TS nominal trip setpoint value requirements (including NPP licensees using allowable value in its TSs) and would actuate plant degraded voltage protection, is the NPP offsite power system declared inoperable under the plant TSs? If not, why not?	Response: Yes. VY would declare the immediate access source "inoperable". The TSO has real-time monitor capability for the connecting 345 kV and 115 kV transmission lines and VY is notified by the TSO if the loss of the unit and transfer of station and accident loads would result in an unacceptable offsite post-VY-trip voltage. There are a number of predetermined outage conditions for the connecting 345 kV and 115 kV transmission lines, which could result in the trip of VY for an N-2 system contingency. If one of these line outages was scheduled or occurred, VY is notified by ISO-NE or the VY associated LCC and a pre-determined corrective action would be implemented by VY and/or the TSO to resolve the stability issue per direction from the ISO-NE.
3(b). If onsite safety-related equipment (e.g., emergency diesel generators or safety-related motors) is lost when subjected to a double	Response: Not applicable. Double sequencing is not part of the VY licensing basis and VY is not designed or analyzed for double sequencing scenarios.

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sequencing (LOCA with delayed LOOP event) as a result of the anticipated system performance and is incapable of performing its safety functions as a result of responding to an emergency actuation signal during this condition, is the equipment considered inoperable? If not, why not?	In the event any onsite safety related equipment is lost, then the equipment is declared inoperable as specified in plant TS.
3(c). Describe your evaluation of onsite safety-related equipment to determine whether it will operate as designed during the condition described in question 3(b).	Response: Not applicable. See response to 3(b).
3(d). If the NPP licensee is notified by the TSO of other grid conditions that may impair the capability or availability of offsite power, are any plant TS action statements entered? If so, please identify them.	Response: Yes. The applicable TS action statements are entered based on the grid condition identified and how that condition may potentially impair the offsite power source. TS 3.10.B.3 provides requirements for the operability of offsite power sources during plant operation.

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3(e). If you believe your plant TSs do not require you to declare your offsite power system or safety-related equipment inoperable in any of these circumstances, explain why you believe you comply with the provisions of GDC 17 and your plant TSs, or describe what compensatory actions you intend to take to ensure that the offsite power system and safety-related components will remain operable when switchyard voltages are inadequate.	Response: Not applicable. Refer to response in 3(d).
3(f). Describe if and how NPP operators are trained and tested on the compensatory actions mentioned in your answers to questions 3(a) through (e).	Response: VY licensed operators are trained (classroom and simulator) and tested in applicable degraded voltage operations and plant procedures as part of the initial and requalification training programs.

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4. Use of criteria and methodologies to assess whether the offsite power system will remain operable following a trip of your NPP.	
4(a). Do the NPP operators have any guidance or procedures in plant TS bases sections, the final safety analysis report, or plant procedures regarding situations in which the condition of plant-controlled or -monitored equipment (e.g., voltage regulators, auto tap changing transformers, capacitors, static VAR compensators, main generator voltage regulators) can adversely affect the operability of the NPP offsite power system? If so, describe how the operators are trained and tested on the guidance and procedures.	Response: VY operating procedures, TS Bases, and UFSAR provide guidance on the impact of plant equipment due to degraded voltage conditions and the required operator actions in accordance with plant TS. Plant procedures also address control and monitoring of the main generator output voltage regulator to support plant and grid conditions. The LCC controls the operation of the VY 115 kV capacitors and this is coordinated with VY. VY does not have auto tap changing transformers or static compensators. The VY licensed operators are trained (classroom and simulator) and tested in applicable procedures as part of the initial and requalification training programs.

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4(b). If your TS bases sections, the final safety analysis report, and plant procedures do not provide guidance regarding situations in which the condition of plant-controlled or -monitored equipment can adversely affect the operability of the NPP offsite power system, explain why you believe you comply with the provisions of GDC 17 and the plant TSs, or describe what actions you intend to take to provide such guidance or procedures.	Response: Not applicable. See response 4(a).

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Use of NPP licensee/TSO protocols and analysis tool by TSOs to assist NPP licensees in monitoring grid conditions for consideration in maintenance risk assessments The Maintenance Rule (10 CFR 50.65(a)(4)) requires that licensees assess and manage the increase in risk that may result from proposed maintenance activities before performing them.	
5. Performance of grid reliability evaluations as part of the maintenance risk assessments required by 10 CFR 50.65(a)(4).	
5(a). Is a quantitative or qualitative grid reliability evaluation performed at your NPP as part of the maintenance risk assessment required by 10 CFR 50.65(a)(4) before performing grid-risk-sensitive maintenance activities? This includes surveillances, post-maintenance testing, and preventive and corrective maintenance that could increase the probability of a plant trip or LOOP or impact LOOP or SBO coping capability, for example, before taking a risk-significant piece of equipment (such as an EDG, a battery, a steam-driven pump, an alternate AC power source) out-of-service?	Response: Yes. VY performs a qualitative risk assessment which includes a grid reliability evaluation, as required by 10 CFR 50.65. The program is implemented by VY's applicable (online or outage) risk management procedures. These procedures require plant risk assessment before removing equipment from service for planned maintenance activities, or upon discovery of equipment out of service that is unplanned. These procedures require an evaluation of current and anticipated grid conditions before removing risk-significant equipment from service. ORAM-Sentinel (O-S) is a computer based program that provides both probabilistic and deterministic evaluations for plant equipment configurations (both planned and unplanned) and testing activities. From the deterministic evaluation, O-S outputs a defense-in-depth assessment for safety functions as well as the plant's transient mitigation status and likelihood of experiencing a plant transient or loss of offsite power (e.g., degraded grid reliability). From the probabilistic evaluation, O-S outputs core damage frequency results for pre-analyzed plant configurations as well as equipment "remain-in-service" and "return-to-service" priorities. VY's work activity risk management procedures require development of a risk plan for activities that would increase grid instability in combination with external events. The VY risk management procedures direct the plant staff to evaluate emergent conditions including grid instability in combination with external events. These procedures explicitly require degraded voltage conditions to be considered, including addressing loss of off-site power, and alternate AC sources. Periodic communications with the ISO-NE are employed as required by procedure to ascertain the voltage conditions of the off-site power sources, which are factored into the on-going and planned maintenance activities.

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5(b). Is grid status monitored by some means for the duration of the grid-risk-sensitive maintenance to confirm the continued validity of the risk assessment and is risk reassessed when warranted? If not, how is the risk assessed during grid-risk-sensitive maintenance?	Response: Yes. The connecting 345 kV and 115 kV transmission line status is continuously monitored by the TSO and LCCs. See response 1(b). If conditions occur that impact VY's operation or its immediate access source, such as grid-risk-sensitive maintenance, the TSO or appropriate LCC would notify VY operations.
5(c). Is there a significant variation in the stress on the grid in the vicinity of your NPP site caused by seasonal loads or maintenance activities associated with critical transmission elements? Is there a seasonal variation (or the potential for a seasonal variation) in the LOOP frequency in the local transmission region?	Response: Yes. Based on the number of times TSO had made off-normal system notifications over the past 19 years, the summer months are the most stressed in New England. A practical means of determining the magnitude of the variances cannot be provided. Yes. Electric Power Research Institute (EPRI) Technical Report 1011759 Frequency Determination Method for Cascading Grid Events, dated December 2005, indicates there is a statistically significant seasonal-regional variation in recorded LOOP events from 1997 to 2004. The data shows a comparatively higher probability of a LOOP occurring in the summer months in the Northeast Power Coordination Council (NPCC) region, the North American Electric Reliability Council (NERC) region applicable to VY. This correlates with recent NRC publications, e.g. NUREG/CR-6890 Reevaluation of Station Blackout Risk at Nuclear Power Plants: Analysis of Loss of Offsite Power Events (1986 – 2004), and Information Notice 2006-06, Loss of Offsite Power and Station Blackout Are More Probable During Summer Period.

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If the answer to either question is yes, discuss the time of year when the variations occur and their magnitude.	Technical Report 1011759 Table 4-6 indicates seasonal weighted values of grid-centered events for the NPCC region, in which VY is located, are 0.75 (Spring), 4.0 (Summer), highly unlikely (Fall), and 1.25 (Winter).
5(d). Are known time-related variations in the probability of a LOOP at your plant site considered in the grid-risk-sensitive maintenance evaluation? If not, what is your basis for not considering them?	Response: No. Time-related variations in LOOP probability are currently not quantitatively evaluated at VY. For 10CFR50.65 (a)(4) workweek evaluations of activities which may impact availability of the 345kV/115kV transmission lines or mitigating systems, VY uses a single yearly-averaged initiating event frequency for the LOOP. However, since maintenance is performed throughout the year on LOOP-sensitive components (such as EDGs, steam-driven high pressure injection pumps, etc.), procedural consideration of "high risk" periods (severe weather, grid disturbances, transmission line maintenance, etc.) is applied as described in the answer to question 5(a). Based on this, the averaged initiating event frequency is currently judged to be adequate and changes to this approach will be considered as further information becomes available.
5(e). Do you have contacts with the TSO to determine current and anticipated grid conditions as part of the grid reliability evaluation performed before conducting grid-risk-sensitive maintenance activities?	Response: Yes. Communications, including meetings and teleconferences, with the TSO are held regularly and factored into the planning of risk-sensitive equipment maintenance work as discussed in the response to question 5(a).

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5(f). Describe any formal agreement or protocol that you have with your TSO to assure that you are promptly alerted to a worsening grid condition that may emerge during a maintenance activity.	Response: The TSO has operating procedures which require TSO to notify VY if grid conditions degrade as described in response 1(b).
5(g). Do you contact your TSO periodically for the duration of the grid-risk-sensitive maintenance activities?	Response: Yes. The TSO and/or LCC are contacted prior to switchyard maintenance activities and periodically during work activities to verify schedule and expected completion.
5(h). If you have a formal agreement or protocol with your TSO, describe how NPP operators and maintenance personnel are trained and tested on this formal agreement or protocol.	Response: Training is provided to licensed operators during license initial training and during operator requalification to recognize when conditions require contacting the TSO and what protocol to initiate for TSO contact.

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5(i). If your grid reliability evaluation, performed as part of the maintenance risk assessment required by 10 CFR 50.65(a)(4), does not consider or rely on some arrangement for communication with the TSO, explain why you believe you comply with 10 CFR 50.65(a)(4).	Response: Not applicable. See response 5(e).
5(j). If risk is not assessed (when warranted) based on continuing communication with the TSO throughout the duration of grid-risk-sensitive maintenance activities, explain why you believe you have effectively implemented the relevant provisions of the endorsed industry guidance associated with the maintenance rule.	Response: Not applicable. See response 5(a).

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5(k). With respect to questions 5(i) and 5(j), you may, as an alternative, describe what actions you intend to take to ensure that the increase in risk that may result from proposed grid-risk-sensitive activities is assessed before and during grid-risk-sensitive maintenance activities, respectively.	Response: Not applicable. See response 5(a) and 5(e).

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6. Use of risk assessment results, including the results of grid reliability evaluations, in managing maintenance risk, as required by 10 CFR 50.65(a)(4).	
6(a). Does the TSO coordinate transmission system maintenance activities that can have an impact on the NPP operation with the NPP operator?	Response: Yes. The TSO coordinates the connecting 345 kV and 115 kV transmission system maintenance activities with VY in accordance with an ISO-NE procedure.
6(b). Do you coordinate NPP maintenance activities that can have an impact on the transmission system with the TSO?	Response: Yes. Work activities that involve 115kV and/or 345kV transmission equipment inside the owner controlled area are coordinated with the TSO by VY. VY and LCC permission is required for 115 kV and 345 kV switchyard work activities and VY controls the access to these switchyards.
6(c). Do you consider and implement, if warranted, the rescheduling of grid-risk-sensitive maintenance activities (activities that could (i) increase the likelihood of a plant trip, (ii) increase LOOP probability, or (iii) reduce LOOP or SBO coping capability) under existing, imminent, or worsening degraded grid reliability conditions?	Response: Yes. VY plans and schedules and, if necessary, will reschedule work activities taking into account grid conditions. Emergent issues with the grid are managed to maintain a high level of plant safety. VY will reschedule work as required to maintain offsite power capability.

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6(d). If there is an overriding need to perform grid-risk-sensitive maintenance activities under existing or imminent conditions of degraded grid reliability, or continue grid-risk-sensitive maintenance when grid conditions worsen, do you implement appropriate risk management actions? If so, describe the actions that you would take. (These actions could include alternate equipment protection and compensatory measures to limit or minimize risk.)	Response: Yes. VY would evaluate performing grid-risk-sensitive maintenance activities per the applicable (online or outage) risk management procedure. This process will determine risk, identify protected equipment and identify systems in which work should be limited.
6(e). Describe the actions associated with questions 6(a) through 6(d) above that would be taken, state whether each action is governed by documented procedures and identify the procedures, and explain why these actions are effective and will be consistently accomplished.	Response: All maintenance, including grid-risk-sensitive maintenance activities, is evaluated for plant risk. The use of procedures for the evaluations maintains this focus during the planning process.

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6(f). Describe how NPP operators and maintenance personnel are trained and tested to assure they can accomplish the actions described in your answers to question 6(e).	Response: Senior Reactor Operators are trained in the use of the applicable (online or outage) risk management procedures as part of their ongoing training programs.
6(g). If there is no effective coordination between the NPP operator and the TSO regarding transmission system maintenance or NPP maintenance activities, please explain why you believe you comply with the provisions of 10 CFR 50.65(a)(4).	Response: Not applicable.
6(h). If you do not consider and effectively implement appropriate risk management actions during the conditions described above, explain why you believe you effectively addressed the relevant provisions of the associated NRC-endorsed industry guidance.	Response: Not applicable.

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6(i). You may, as an alternative to questions 6(g) and 6(h) describe what actions you intend to take to ensure that the increase in risk that may result from grid-risk-sensitive maintenance activities is managed in accordance with 10 CFR 50.65(a)(4).	Response: Not applicable.

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Offsite power restoration procedures in accordance with 10 CFR 50.63 as developed in Section 2 of RG 1.155 Pursuant to 10 CFR 50.63, the NRC requires that each NPP licensed to operate be able to withstand an SBO for a specified duration and recover from the SBO. NRC RG 1.155 gives licensees guidance on developing their approaches for complying with 10 CFR 50.63.	
7. Procedures for identifying local power sources that could be made available to resupply your plant following a LOOP event. Note: Section 2, "Offsite Power," of RG 1.155 (ADAMS Accession No. ML003740034) states: Procedures should include the actions necessary to restore offsite power and use nearby power sources when offsite power is unavailable. As a minimum, the following potential causes for loss of offsite power should be considered: - Grid under-voltage and collapse - Weather-induced power loss - Preferred power distribution system faults that could result in the loss of normal power to essential switchgear buses	
7(a). Briefly describe any agreement made with the TSO to identify local power sources that could be made available to re-supply power to your plant following a LOOP event.	Response: VY has no agreement with the TSOs to identify local power sources. However, VY has formal agreements with the Transmission Owner (Interconnection Agreement) and the TSO (Market Participant Agreement). The Transmission Owner and TSO agreements require all parties to operate per ISO-NE procedures and documents, therefore the ISO-NE procedures and documents are considered part of the formal agreements. ISO-NE, and the TSOs have restoration procedures which identify how power will be restored to NPPs as a priority load. The TSOs are responsible for coordinating the restoration of offsite power to the NPP. The NPP is considered a critical facility and restoration of power is a priority. The adjacent Vernon Hydroelectric Station (VHS) is identified as VY's Alternate AC (AAC) Source of power for station blackout. VHS is not directly electrically connected to the normal sources of offsite power to VY; therefore it is not impacted by system faults that could result in the loss of

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	normal power to emergency safeguard buses. VHS and the line to VY from VHS substation meet the AAC source requirements for protection against weather induced power loss. VHS is an ISO-NE black start unit and it may be required to "black start" in the event of a regional grid blackout. Black start of the VHS is dispatched and coordinated by the TSOs. For VHS transmission switching, VY would interface with the Rhode Island, Eastern Massachusetts and Vermont Control (REMVEC) LCC.
7(b). Are your NPP operators trained and tested on identifying and using local power sources to resupply your plant following a LOOP event? If so, describe how.	Response: Not Applicable. See response to 7(a).
7(c). If you have not established an agreement with your plant's TSO to identify local power sources that could be made available to resupply power to your plant following a LOOP event, explain why you believe you comply with the provisions of 10 CFR 50.63, or describe what actions you intend to take to establish compliance.	Response: Not applicable. ISO-NE has agreements with area black-start-capable units in accordance with ISO-NE procedures.

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Losses of offsite power caused by grid failures at a frequency of equal to or greater than once in 20 site-years in accordance with Table 4 of Regulatory Guide 1.155 for complying with 10 CFR 50.63 Pursuant to 10 CFR 50.63, the NRC requires that each NPP licensed to operate be able to withstand an SBO for a specified duration and recover from the SBO. NRC RG 1.155 gives licensees guidance on developing their approaches for complying with 10 CFR 50.63.	
8. Maintaining SBO coping capabilities in accordance with 10 CFR 50.63.	
8(a). Has your NPP experienced a total LOOP caused by grid failure since the plant's coping duration was initially determined under 10 CFR 50.63?	Response: No. During the last twenty years, VY has not experienced the loss of both the immediate access and the delayed access sources.
8(b). If so, have you reevaluated the NPP using the guidance in Table 4 of RG 1.155 to determine if your NPP should be assigned to the P3 offsite power design characteristic group?	Response: Not applicable. See Response 8(a).

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8(c). If so, what were the results of this reevaluation, and did the initially determined coping duration for the NPP need to be adjusted?	Response: Not applicable. See Response 8(a).
8(d). If your NPP has experienced a total LOOP caused by grid failure since the plant's coping duration was initially determined under 10 CFR 50.63 and has not been reevaluated using the guidance in Table 4 of RG 1.155, explain why you believe you comply with the provisions of 10 CFR 50.63 as stated above, or describe what actions you intend to take to ensure that the NPP maintains its SBO coping capabilities in accordance with 10 CFR 50.63.	Response: Not applicable. See Response 8(a).

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Actions to ensure compliance.	
9. If you determine that any action is warranted to bring your NPP into compliance with NRC regulatory requirements, including TSs, GDC 17, 10 CFR 50.65(a)(4), 10 CFR 50.63, 10 CFR 55.59 or 10 CFR 50.120, describe the schedule for implementing it.	
Response: No actions are identified.	