

June 29, 2012

Ms. Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

**Re: NERC Full Notice of Penalty regarding LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company
FERC Docket No. NP12-_-000**

Dear Ms. Bose:

The North American Electric Reliability Corporation (NERC) hereby provides this Notice of Penalty¹ regarding LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company (LG&E & KU), NERC Registry ID# NCR01223,² in accordance with the Federal Energy Regulatory Commission's (Commission or FERC) rules, regulations and orders, as well as NERC Rules of Procedure including Appendix 4C (NERC Compliance Monitoring and Enforcement Program (CMEP)).³

LG&E & KU⁴ is a diversified energy services company headquartered in Louisville, KY. The company serves customers in 77 counties in Kentucky and five counties in Virginia. LG&E & KU operates 45

¹ *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards* (Order No. 672), III FERC Stats. & Regs. ¶ 31,204 (2006); *Notice of New Docket Prefix "NP" for Notices of Penalty Filed by the North American Electric Reliability Corporation*, Docket No. RM05-30-000 (February 7, 2008). See also 18 C.F.R. Part 39 (2011). *Mandatory Reliability Standards for the Bulk-Power System*, FERC Stats. & Regs. ¶ 31,242 (2007) (Order No. 693), *reh'g denied*, 120 FERC ¶ 61,053 (2007) (Order No. 693-A). See 18 C.F.R. § 39.7(c)(2).

² The SERC Reliability Corporation (SERC) confirmed that LG&E & KU was included on the NERC Compliance Registry as a Balancing Authority (BA), Distribution Provider (DP), Generator Operator (GOP), Generator Owner (GO), Interchange Authority (IA), Load Serving Entity (LSE), Planning Authority (PA), Purchasing-Selling Entity (PSE), Resource Planner (RP), Transmission Operator (TOP), Transmission Owner (TO), Transmission Planner (TP) and Transmission Service Provider (TSP). As a TO, TOP, and a GOP, LG&E & KU is subject to the requirements of the NERC Reliability Standards addressed in this Full Notice of Penalty.

³ See 18 C.F.R. § 39.7(c)(2).

⁴ At the time the violations occurred, LG&E & KU was owned by E.ON AG, headquartered in Dusseldorf, Germany, and was doing business as E.ON U.S. Services, Inc. By letter dated September 30, 2010, E.ON U.S. Services, Inc. informed SERC that effective immediately its name had been changed to LG&E and KU Services Company.

3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 2

generators with a net generation capacity of approximately 8,300 MW, and owns and operates 4,747 miles of transmission lines.⁵

This Notice of Penalty is being filed with the Commission because the SERC Reliability Corporation (SERC) and LG&E & KU have entered into a Settlement Agreement to resolve all outstanding issues arising from SERC's determination and findings of the violations of VAR-002-1 R1 and R3, VAR-002-1.1a R2 and R3, TOP-002-2a R16, TOP-007-0 R1, and FAC-009-1 R1. According to the Settlement Agreement, LG&E & KU neither admits nor denies the violations, and has agreed to the assessed penalty of seventy-five thousand dollars (\$75,000), in addition to other remedies and actions to mitigate the instant violations and facilitate future compliance under the terms and conditions of the Settlement Agreement. Accordingly, the violations identified as NERC Violation Tracking Identification Numbers SERC201000584, SERC201000585, SERC201000578, SERC201000601, SERC201000604, SERC201000606, SERC201000607 are being filed in accordance with the NERC Rules of Procedure and the CMEP.

Statement of Findings Underlying the Violations

This Notice of Penalty incorporates the findings and justifications set forth in the Settlement Agreement executed on June 13, 2012, by and between SERC and LG&E & KU, which is included as Attachment a. The details of the findings and basis for the penalty are set forth in the Settlement Agreement and herein. This Notice of Penalty filing contains the basis for approval of the Settlement Agreement by the NERC Board of Trustees Compliance Committee (NERC BOTCC). In accordance with Section 39.7 of the Commission's regulations, 18 C.F.R. § 39.7 (2011), NERC provides the following summary table identifying each violation of a Reliability Standard resolved by the Settlement Agreement, as discussed in greater detail below.

Region	Registered Entity	NOC ID	NERC Violation ID	Reliability Std.	Req. (R)	VRF	Total Penalty
SERC	LG&E & KU	NOC-1404	SERC201000584	VAR-002-1	1	Medium	75,000
			SERC201000585	VAR-002-1	3	Medium	

⁵LG&E & KU's transmission lines consist of the following: 57 miles of 500 kV, 508 miles of 345 kV, 583 miles of 161 kV, 1,144 miles of 138 kV and 2,455 miles of 69 kV.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 3

			SERC201000578	VAR-002-1.1a	2	Medium	
			SERC201000601	VAR-002-1.1a	3	Medium	
			SERC201000604	TOP-002-2a	16	Medium ⁶	
			SERC201000606	TOP-007-0	1	High	
			SERC201000607	FAC-009-1	1	Medium	

VAR-002-1 R1 (SERC201000584)

The purpose statement of Reliability Standard VAR-002-1 R1 provides: “To ensure generators provide reactive and voltage control necessary to ensure voltage levels, reactive flows, and reactive resources are maintained within applicable Facility Ratings to protect equipment and the reliable operation of the Interconnection.”⁷

VAR-002-1 R1 provides: “The Generator Operator shall operate each generator connected to the interconnected transmission system in the automatic voltage control mode (automatic voltage regulator in service and controlling voltage) unless the Generator Operator has notified the Transmission Operator.”

VAR-002-1 R1 has a “Medium” Violation Risk Factor (VRF) and a “Lower” Violation Severity Level (VSL). The subject violation applies to LG&E & KU’s Generator Operator (GOP) function.

On July 30, 2010, LG&E & KU self-reported that six generators had been operating with the automatic voltage regulator (AVR) in automatic reactive power mode instead of automatic voltage control mode, without notifying its Transmission Operator (TOP), as required.

This violation was discovered while LG&E & KU was investigating a possible VAR-002-1.1a R2 violation.⁸ LG&E & KU found that, since August 2, 2007, a 178 MW peaking generator had been operating with its AVR in automatic reactive power mode. LG&E & KU then reviewed its remaining generators and found

⁶ TOP-002-2a R16 has a Medium Violation Risk Factor (VRF) and R16.1 and R16.2 each have a High VRF.

⁷ Version 1 and Version 1.1a of this Standard, which involves two of the violations described in this Full Notice of Penalty, have the same purpose statement.

⁸ On July 19, 2010, LG&E & KU self-reported the violation of VAR-002-1.1a R2 to SERC, as described in detail below.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 4

five additional generators that had been operating in automatic reactive power mode instead of automatic voltage control.

SERC learned that four out of the six generators are simple cycle combustion turbines. The two remaining generators are hydro units, which are exempted from the generator voltage requirement by the TOP. However, LG&E & KU was still required to comply with VAR-002-1 R1 and R3. Five out of the six generators had been operating in automatic reactive power mode since August 2, 2007. The sixth generator had been operating in automatic reactive power mode since January 12, 2008.

SERC determined that LG&E & KU, as a GOP, was in violation of VAR-002-1 R1 because it operated six of its 45 generators in a mode other than automatic voltage control without notifying the TOP.

SERC determined the duration of the violation to be from August 2, 2007, the date the Standard became mandatory and enforceable, through August 17, 2010, when all the AVRs were switched to automatic voltage control mode or to a TOP-directed state.

SERC determined that this violation posed a minimal risk and did not pose a serious or substantial risk to the reliability of the bulk power system (BPS) because the risk was mitigated by several factors. First, the AVRs were operating in an automatic mode and were reacting automatically to system conditions. Second, the generators maintained their voltage schedules throughout the time period. Third, the four fossil generators are peaking units and are therefore used during peaking conditions only. Finally, the two hydro generators with a total capacity of 26 MW are exempted by the TOP from the voltage schedule, and as a result, the TOP does not expect a particular response from this generator in the case of a transient event that would require the AVR to respond.

VAR-002-1 R3 (SERC201000585)

VAR-002-1 R3 provides:

R3. Each Generator Operator shall notify its associated Transmission Operator as soon as practical, but within 30 minutes of any of the following:

R3.1. A status or capability change on any generator Reactive Power resource, including the status of each automatic voltage regulator and power system stabilizer and the expected duration of the change in status or capability.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 5

R3.2. A status or capability change on any other Reactive Power resources under the Generator Operator's control and the expected duration of the change in status or capability.

VAR-002-1 R3 has a "Medium" VRF and a "Lower" VSL.⁹ The subject violation applies to LG&E & KU's GOP function.

On July 30, 2010, LG&E & KU self-reported that a generator had been retrofitted with an AVR and the TOP had not been notified of the capability change within 30 minutes, as required by this Standard. The discovery was made on July 28, 2010, as a result of an internal review of operating records.

This violation was discovered while LG&E & KU was investigating a possible VAR-002-1.1a R2 violation. The generator at issue is a small hydro unit that had originally been built without AVR capability. LG&E & KU retrofitted the 13 MW generator with an AVR, which was placed into service on January 12, 2008.

SERC determined that LG&E & KU, as a GOP, was in violation of VAR-002-1 R3 because it failed to notify the TOP within 30 minutes after the capability change.

SERC determined the duration of the violation to be from January 12, 2008, when the AVR was placed in service, until July, 28, 2010, when the TOP was notified.

SERC determined that this violation posed a minimal risk and did not pose a serious or substantial risk to the reliability of the BPS because the risk was mitigated by several factors. First, the total capacity of the hydro generator is limited to 13 MW. Second, the generator is exempted by the TOP from a voltage schedule. Because of the voltage schedule exemption, the TOP does not expect a particular response from this generator in the case of a transient event that would require the AVR to respond.

VAR-002-1.1a R2 (SERC201000578)

VAR-002-1.1a R2 provides:

R2. Unless exempted by the Transmission Operator, each Generator Operator shall maintain the generator voltage or Reactive Power output (within applicable Facility Ratings¹⁰) as directed by the Transmission Operator.

⁹ SERC assessed a "Lower" VSL in accordance with the August 24, 2009 VSL Matrix because LG&E & KU had one incident of failing to notify the TOP of a capability change.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 6

R2.1. When a generator's automatic voltage regulator is out of service, the Generator Operator shall use an alternative method to control the generator voltage and reactive output to meet the voltage or Reactive Power schedule directed by the Transmission Operator.

R2.2. When directed to modify voltage, the Generator Operator shall comply or provide an explanation of why the schedule cannot be met.

(footnote included in Requirement language)

VAR-002-1.1a R2 has a "Medium" VRF and a "Lower" VSL.¹¹ The subject violation applies to LG&E & KU's GOP function.

On July 19, 2010, LG&E & KU self-reported that a generator had not maintained the TOP-required bus voltage schedule on May 28, 2010. According to LG&E & KU, the generator involved is a 178 MW simple-cycle gas turbine used for peaking purposes. Prior to the week of the incident, the generator had not been operated since September 2009. The bus voltage schedule for the generator is 140 kV +/- 1 kV. For one hour, on May 28, 2010, the generator's integrated average voltage exceeded the tolerance in the established schedule and operated at 141.769 kV.

SERC determined that LG&E & KU, as a GOP, was in violation of VAR-002-1.1a R2 because it failed to maintain the TOP's established bus voltage schedule, as required.

SERC determined that the violation occurred on May 28, 2010 for the duration of one hour when the generator failed to maintain the TOP-required bus voltage schedule.

SERC determined that this violation posed a minimal risk and did not pose a serious or substantial risk to the reliability of the BPS because the risk was mitigated by several factors. First, the duration of the voltage deviation was for one hour only. Second, the voltage exceeded the TOP's 140 kV specified tolerance by a small margin of 0.55%. Third, the generator has a 178 MW capacity, and therefore has a small impact on area voltage since it represents only 5% of the approximately 3,500 MW of regulated generation in the immediate area.

¹⁰ When a Generator is operating in manual control, reactive power capability may change based on stability considerations and this will lead to a change in the associated Facility Ratings.

¹¹ SERC assessed a "Lower" VSL in accordance with the August 24, 2009 VSL Matrix because LG&E & KU failed to maintain a voltage schedule for less than 25% of its generators.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 7

VAR-002-1.1a R3 (SERC201000601)

VAR-002-1.1a R3 provides:

R3. Each Generator Operator shall notify its associated Transmission Operator as soon as practical, but within 30 minutes of any of the following:

R3.1. A status or capability change on any generator Reactive Power resource, including the status of each automatic voltage regulator and power system stabilizer and the expected duration of the change in status or capability.

R3.2. A status or capability change on any other Reactive Power resources under the Generator Operator's control and the expected duration of the change in status or capability.

VAR-002-1.1a R3 has a "Medium" VRF and a "Lower" VSL.¹² The subject violation applies to LG&E & KU's GOP function.

On August 24, 2010, LG&E & KU self-reported that it failed to notify the TOP within 30 minutes after the reduction in a generator's reactive power capability, as required.

According to LG&E & KU, the generator at issue is a 525 MW coal-fired unit, which is a part of a larger facility comprised of four 500+ MW units. A hydrogen cooler leak was discovered during a routine operator check on July 30, 2010. While LG&E & KU notified the TOP that the generator's load would need to be lowered as a result of the leak, it failed to inform the TOP that the reactive capability of the generator would also be restricted. While LG&E & KU maintained the voltage schedule, the hydrogen cooler leak caused a reduction of approximately 20% in the generator's reactive capability. LG&E & KU notified the TOP of the reactive power capability change on August 2, 2010.

SERC determined that LG&E & KU, as a GOP, was in violation of VAR-002-1.1a R3 because it failed to notify the TOP within 30 minutes after the change in status in the generator's reactive power capability.

¹² SERC assessed a "Lower" VSL in accordance with the June 25, 2010 VSL Matrix because LG&E & KU had one incident of failing to notify the TOP of a change in reactive power capability.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 8

SERC determined the duration of the violation to be from July 30, 2010, the date when the leak was discovered and the generator's reactive capability declined, through August 2, 2010, when LG&E & KU notified the TOP of the reactive power capability change.

SERC determined that this violation posed a minimal risk and did not pose a serious or substantial risk to the reliability of the BPS because the risk was mitigated by several factors. First, the reduction in reactive output was limited to approximately 20% of the total reactive capability of the unit. Second, LG&E & KU's voltage schedule was maintained throughout the violation period, thus reducing the risk to the BPS. Third, LG&E & KU notified the TOP of the change as soon as it confirmed the reduction in reactive capability.

TOP-002-2a R16 (SERC201000606)

The purpose statement of Reliability Standard TOP-002-2a provides: "Current operations plans and procedures are essential to being prepared for reliable operations, including response for unplanned events."

TOP-002-2a R16 provides:

R16. Subject to standards of conduct and confidentiality agreements, Transmission Operators shall, without any intentional time delay, notify their Reliability Coordinator and Balancing Authority of changes in capabilities and characteristics including but not limited to:

R16.1. Changes in transmission facility status.

R16.2. Changes in transmission facility rating.

TOP-002-2a R16 has a "Medium" VRF and a "Severe" VSL.¹³ The subject violation applies to LG&E & KU's TOP function.

On August 31, 2010, LG&E & KU self-reported that it failed to promptly communicate a change in a transformer rating to its Reliability Coordinator (RC), as required. LG&E & KU violations of TOP-002-2a

¹³ SERC assessed a "Severe" VSL in accordance with the May 3, 2010 VSL Matrix because LG&E & KU failed to notify its Reliability Coordinator of changes in transmission facility status.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 9

R16, TOP-007-0 R1 and FAC-009-1 R1 stem from the same facts and circumstances as described in this section of this Full Notice of Penalty.

LG&E & KU reported that a new 138 kV Middletown-Collins line was being constructed and was expected to be placed into service in the fall of 2010. On May 27, 2010, a piece of equipment impacting Transformer 4 (TR4) at the LG&E & KU Middletown substation was reconfigured to address unplanned changes in the construction project, which resulted in a reduced Facility Rating. LG&E & KU updated its Facility Rating Program on June 30, 2010. However, LG&E & KU's contingency analysis (CA) model was not updated with the new Facility Rating until July 20, 2010, when LG&E & KU's energy management system was updated. LG&E & KU's RC received the updated rating for TR4 on July 23, 2010.

On July 22, 2010, LG&E & KU discovered a discrepancy between its CA model and the RC's CA model. LG&E & KU's CA model identified an exceedance of the system operating limit related to TR4 while the RC's CA model did not. Although there was no overload in real time, the discrepancy caused LG&E & KU to investigate the situation. According to LG&E & KU, it was prepared and had operating procedures in place outlining the real-time mitigation options in case a contingency condition occurred. LG&E & KU discovered that the discrepancy was caused by the re-rating of TR4, which was reflected in LG&E & KU's CA model but not in the RC's CA model. Because the re-rating of TR4 had not been communicated to the RC, it was not being reflected in the RC's CA model.

After the reason for the disparate analyses was identified, LG&E & KU did not immediately notify its RC of the problem or the cause, but instead began a technical review in order to identify solutions that would increase the TR4 rating and eliminate the exceedance of the system operating limit in its CA model. LG&E & KU determined that a solution could be completed before the next day's heavy load hours when the likelihood of the potential risk identified in its CA model was the greatest. At approximately 19:00 on July 22, 2010, LG&E & KU submitted a request to the RC for an emergency overnight outage to perform the work. On July 23, 2010, following the completion of the work, the new TR4 rating was entered into LG&E & KU's CA model as well as the RC's CA model.

The actual configuration of TR4 and the resulting derating of TR4 should have been updated in LG&E & KU's CA model and communicated to the RC at the time the reconfiguration occurred on May 27, 2010. Instead, LG&E & KU updated its CA model to reflect the de-rated value for TR4 on July 20, 2010. The contingency resulting in a possible exceedance of the Facility Rating was identified on July 22, 2010. At that point in time, the RC had still not been notified the RC of the change in TR4's rating or the

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 10

potential for over-loading of TR4 during specific N-1 contingency conditions.¹⁴ Once the contingency problem was recognized, LG&E & KU immediately completed work to lift the de-rating of TR4. LG&E & KU also had operating procedures in place to react to the contingency. While the real-time loading of TR4 never exceeded the Facility Rating, results from the analysis requested by SERC indicated that the contingency may have been present but not identified for as many as 30 days during the period May 27, 2010 through July 22, 2010.

SERC determined that LG&E & KU, as a TOP, was in violation of TOP-002-2a R16 because it failed to timely notify its RC of a change in a transmission Facility Rating.

SERC determined the duration of the violation to be from May 27, 2010, the date LG&E & KU changed the TR4 configuration, through July 23, 2010, when LG&E & KU informed its RC of the new rating.

SERC determined that this violation posed a moderate risk and did not pose a serious or substantial risk to the reliability of the BPS because there was a risk of exceeding the established rating of TR4 had the specific N-1 contingency occurred. However, there was no real-time overloading at any point and LG&E & KU had operating procedures in place, which outlined instructions operators should take to alleviate the overloading had the contingency occurred. LG&E & KU's operators had the necessary experience to react to a potential N-1 contingency situation, thus reducing the risk to the BPS.

TOP-007-0 R1 (SERC201000606)

The purpose statement of Reliability Standard TOP-007-0 R1 provides: "This standard ensures SOL and IROL violations are being reported to the Reliability Coordinator so that the Reliability Coordinator may evaluate actions being taken and direct additional corrective actions as needed."

TOP-007-0 R1 provides: "A Transmission Operator shall inform its Reliability Coordinator when an IROL or SOL has been exceeded and the actions being taken to return the system to within limits."

TOP-007-0 R1 has a "High" VRF and a "Severe" VSL.¹⁵ The subject violation applies to LG&E & KU's TOP function.

¹⁴ An N-1 contingency refers to a single contingency condition on a generator or transmission system.

¹⁵ SERC assessed a Severe VSL in accordance with the May 3, 2010 VSL Matrix because the TOP failed to inform its RC when a SOL had been exceeded.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 11

On August 31, 2010, LG&E & KU self-reported that it failed to inform the RC when a System Operating Limit (SOL) was exceeded in real-time contingency analysis, as required. This violation stems from the same facts and circumstances described in detail above for the violation of TOP-002-2a R16.

LG&E & KU reported that while the SOL could have been exceeded under an N-1 contingency scenario, the SOL was never exceeded in real time. However, the RC's SOL Methodology requires that SOLs are set to meet BPS performance for both pre-contingency and post-contingency states. Therefore, LG&E & KU was required to inform its RC when its model indicated that a Facility Rating would be exceeded under a first contingency scenario.

SERC determined that LG&E & KU, as a TOP, was in violation of TOP-007-0 R1 because it did not inform the RC of the SOL exceedance under an N-1 as required by the RC's SOL Methodology.

SERC determined the duration of the violation to be from July 22, 2010, the date of the exceedance was discovered, through July 23, 2010, when it notified the RC which also coincided with when the exceedance was no longer present.

SERC determined that this violation posed a moderate risk but did not pose a serious or substantial risk to the reliability of the BPS because the risk was mitigated by several factors. First, while LG&E & KU's failure to report the pre-contingency SOL could have limited the RC's ability to evaluate and implement wide-area corrective actions had the contingency occurred, the SOL was never exceeded in real time. Second, LG&E & KU was prepared and had operating procedures in place outlining the real-time mitigation options in case the contingency occurred. LG&E & KU's operators had the necessary experience to react to a potential N-1 contingency situation, thus reducing the risk to the BPS. Third, LG&E & KU took prompt action to alleviate the cause of the contingency thereby minimizing the duration of the risk to the BPS.

FAC-009-1 R1 (SERC201000607)

The purpose statement of Reliability Standard FAC-009-1 provides: "To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies."

FAC-009-1 R1 provides: "The Transmission Owner and Generator Owner shall each establish Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings Methodology."

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 12

FAC-009-1 has a “Medium” VRF and a “Lower” VSL.¹⁶ The subject violation applies to LG&E & KU’s Transmission Owner (TO) function.

On August 31, 2010, LG&E & KU self-reported that it failed to promptly communicate a change in a transformer rating to its RC, as required. This violation stems from the same facts and circumstances as the ones described above for the violations of TOP-002-2a R16 and TOP-007-0 R1.

On May 27, 2010, equipment impacting Transformer 4 (TR4) at the LG&E & KU Middletown substation was reconfigured to address unplanned changes in the construction project, which resulted in a reduced facility rating. LG&E & KU updated its Facility Rating Program on June 30, 2010. Facility Ratings must be established in accordance with LG&E & KU’s Facility Rating Methodology (FRM) and must reflect the most limiting element of the individual equipment that comprises that Facility. As soon as the reconfiguration of TR4 took place on May 27, 2010, LG&E & KU should have recalculated the Facility Rating in accordance with its FRM. The de-rated value for TR4 was not updated in LG&E & KU’s Facility Rating Program until July 20, 2010. Results from the analysis requested by SERC indicated that the contingency may have been present but not identified for as many as 30 days during the period May 27, 2010 through July 22, 2010. While the real-time loading of TR4 never exceeded the Facility Rating, the N-1 contingency could have overloaded TR4 as re-rated on May 27, 2010. However, LG&E & KU had operating procedures in place to react to this contingency had it occurred.

SERC determined that LG&E & KU, as a TO, was in violation of FAC-009-1 R1 because it failed to establish a Facility Rating consistent with its FRM. SERC determined the duration of the violation to be from May 27, 2010, the date when LG&E & KU changed the TR4 configuration, through July 20, 2010, when LG&E & KU updated its Facility Ratings.

SERC determined that this violation posed a moderate risk and did not pose a serious or substantial risk to the reliability of the BPS because there was a risk of exceeding the established rating of the transformer had the specific N-1 contingency occurred. However, there was no real time overloading and LG&E & KU had operating procedures in place to react to the contingency. LG&E & KU’s operators had the necessary experience to react to a potential N-1 contingency situation, thus reducing the risk to the BPS.

¹⁶ SERC assessed a Violation Severity Level (VSL) of “Lower” in accordance with the May 3, 2010 VSL Matrix because LG&E & KU Facility Ratings weren’t consistent with the associated FRM in one minor area.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 13

Regional Entity's Basis for Penalty

According to the Settlement Agreement, SERC has assessed a penalty of seventy-five thousand dollars (\$75,000) for the referenced violations. In reaching this determination, considered the following factors:

1. LG&E & KU self-reported the violations;
2. LG&E & KU was cooperative throughout the compliance enforcement process;
3. There was no evidence of any attempt to conceal a violation nor evidence of intent to do so;
4. SERC determined that the violations did not pose a serious or substantial risk to the reliability of the BPS;
5. LG&E & KU has had two previous violations of VAR-002 R2, which were considered a neutral factor in determining the penalty amount;¹⁷
6. LG&E & KU has had previous violations of FAC-001 R1, R2, and R3 and EOP-008 R1, which were considered a neutral factor in determining the penalty amount;¹⁸
7. LG&E & KU has had previous violations of PRC-005 R1 and R2, and FAC 008-R1, which were considered a neutral factor in determining the penalty amount;¹⁹
8. LG&E & KU has a documented internal compliance program (ICP), which provides the framework for its internal compliance structure. The existence of LG&E & KU's ICP was considered a mitigating factor in determining the penalty amount; and²⁰

¹⁷ These prior violations were filed with FERC under NP10-120-000 on July 6, 2010 and NP11-97-000 on January 31, 2011. On August 5, 2010 and March 2, 2011, FERC issued orders stating it would not engage in further review of the Notices of Penalty under NP10-120-000 and NP11-97-000, respectively.

¹⁸ These prior violations were filed with FERC under NP09-2-000 on December 12, 2008. On January 9, 2009, FERC issued an order stating it would not engage in further review of the Notice of Penalty.

¹⁹ These prior violations were filed with FERC under NP-10-120-000 on July 6, 2010. On August 5, 2010, FERC issued an order stating it would not engage in further review of the Notice of Penalty.

²⁰ SERC determined that LG&E & KU's ICP is reviewed and modified, if necessary, on an annual basis. The ICP requires that all senior management be responsible for ensuring that their subordinates cooperate, are aware of, and understand the ICP. SERC determined that LG&E & KU has a strong culture of senior management involvement in the ICP. LG&E & KU's Steering Committee, which meets monthly and is comprised of approximately 15 officers and other senior managers, approves and reviews the ICP, assigns roles, and monitors all activities related to compliance. LG&E & KU's Compliance Department is responsible for maintaining and implementing the ICP. The Director of Compliance and Ethics, who is also LG&E & KU's Compliance Officer, has oversight of the ICP and independent access to the CEO.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 14

9. SERC reported that there were no other mitigating or aggravating factors or extenuating circumstances that would affect the assessed penalty.

After consideration of the above factors, SERC determined that, in this instance, the penalty amount of seventy-five thousand dollars (\$75,000) is appropriate and bears a reasonable relation to the seriousness and duration of the violations.

Status of Mitigation Plan²¹

VAR-002-1 R1 (SERC201000584)

LG&E & KU's Mitigation Plan to address its violation of VAR-002-1 R1 was submitted to SERC on October 15, 2010 with a proposed completion date of January 14, 2011. The Mitigation Plan was accepted by SERC on June 13, 2011 and approved by NERC on October 31, 2011. The Mitigation Plan for this violation is designated as SERCMIT004520 and was submitted as non-public information to FERC on November 4, 2011 in accordance with FERC orders.

LG&E & KU's Mitigation Plan required LG&E & KU's to:

1. Incorporate the AVR control modes into the combustion turbine and hydro unit start-up procedures;
2. Disable operator access from the power factor and volt-ampere reactive (VAR) modes of operation on the AVR by making the automatic voltage control mode of operation the default control mode; and
3. Train appropriate plant personnel on the procedures and AVR control modes.

LG&E & KU's certified on August 8, 2011 that the above Mitigation Plan requirements were completed on January 14, 2011. As evidence of completion of its Mitigation Plan, LG&E & KU's submitted the following:

1. The edited CT and hydro start-up procedures that incorporated the AVR control modes;
2. Logic diagrams showing the modification of control logic prohibiting operator access to the power factor and VAR modes of operation on the AVR by making the automatic voltage control mode of operation the default mode; and

²¹ See 18 C.F.R § 39.7(d)(7).

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 15

3. Attendance rosters and the materials used for training of LG&E & KU's personnel.

On August 12, 2011, after SERC's review of LG&E & KU's submitted evidence, SERC verified that LG&E & KU's Mitigation Plan was completed on January 14, 2011.

VAR-002-1 R3 (SERC201000585)

LG&E & KU's Mitigation Plan to address its violation of VAR-002-1 R3 was submitted as complete to SERC on January 25, 2011. The Mitigation Plan was accepted by SERC on June 14, 2011 and approved by NERC on August 5, 2011. The Mitigation Plan for this violation is designated as SERCMIT004041-1 and was submitted as non-public information to FERC on August 12, 2011 in accordance with FERC orders.

LG&E & KU's Mitigation Plan required LG&E & KU's to:

1. Revise its procedure to require notification to the TOP before a unit that is retrofitted with an AVR is returned to service, and develop a form for submission to the TOP reflecting such notification; and
2. Train personnel regarding the need to notify the TOP of the installation of the automatic voltage regulators within 30 minutes of the rehabilitated units going into service.

LG&E & KU's certified on January 26, 2011²² that the above Mitigation Plan requirements were completed on December 15, 2010. As evidence of completion of its Mitigation Plan, LG&E & KU's submitted the following:

1. The revised procedure and a copy of the TOP notification form; and
2. The attendance rosters and the materials used for the training.

On July 28, 2011, after SERC review of LG&E & KU's submitted evidence, SERC verified that LG&E & KU's Mitigation Plan was completed on December 15, 2010.

²² The Certification of Mitigation Plan completion for SERC201000585 was signed on January 25, 2011.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 16

VAR-002-1.1a R2 (SERC201000578)

LG&E & KU's Mitigation Plan to address its violation of VAR-002-1.1a R2 was submitted to SERC on September 28, 2010 with a proposed completion date of December 15, 2010. The Mitigation Plan was accepted by SERC on June 13, 2011 and approved by NERC on August 5, 2011. The Mitigation Plan for this violation is designated as SERCMIT004040 and was submitted as non-public information to FERC on August 12, 2011 in accordance with FERC orders.

LG&E & KU's Mitigation Plan required LG&E & KU's to:

1. Add programming logic at the generator that will audibly re-alarm operators if the voltage output of a unit synchronized to the grid falls outside the TOP voltage schedule;
2. Add bus voltage reading display to the control room display; and
3. Train the applicable personnel regarding VAR-002 requirements including the importance of adhering to the TOP voltage schedule.

LG&E & KU's certified on August 8, 2011 that the above Mitigation Plan requirements were completed on December 15, 2010. As evidence of completion of its Mitigation Plan, LG&E & KU submitted the following:

1. A memo detailing that the programming logic was added to the generator;
2. Visuals of the bus voltage reading display; and
3. Attendance rosters and the materials used for the VAR-002 training sessions.

On August 12, 2011, after SERC's review of LG&E & KU's submitted evidence, SERC verified that LG&E & KU's Mitigation Plan was completed on December 15, 2010.

VAR-002-1.1a R3 (SERC201000601)

LG&E & KU's Mitigation Plan to address its violation of VAR-002-1.1a R3 was submitted to SERC on October 15, 2010 with a proposed completion date of January 31, 2011. The Mitigation Plan was accepted by SERC on June 13, 2011 and approved by NERC on August 5, 2011. The Mitigation Plan for this violation is designated as SERCMIT004048-1 and was submitted as non-public information to FERC on August 12, 2011 in accordance with FERC orders.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 17

LG&E & KU's Mitigation Plan required LG&E & KU to:

1. Develop a list of plant equipment which affects reactive capability and post the list in a visible area in the control room; and
2. Train Generation Unit Operators regarding reactive capability limiting equipment, the process for notifying the TOP at the beginning and end of reactive capability change events, and the recording of such events.

LG&E & KU's certified January 28, 2011 that the above Mitigation Plan requirements were completed on January 28, 2011. As evidence of completion of its Mitigation Plan, LG&E & KU submitted the following:

1. A list of the equipment that affects reactive capability and pictures showing that the equipment list was posted on the walls of the control room; and
2. The attendance rosters and the materials used for training of LG&E & KU's personnel.

On July 28, 2011, after SERC review of LG&E & KU's submitted evidence, SERC verified that LG&E & KU's Mitigation Plan was completed on January 28, 2011.

TOP-002-2a R16 (SERC201000604) and TOP-007-0 R1 (SERC201000606)

LG&E & KU's Mitigation Plans to address its violation of TOP-002-2a R16 ²³ and TOP-007-0 R1 were submitted to SERC on January 25, 2011 with a proposed completion date of July 31, 2011. The Mitigation Plan for TOP-002-2a R16 was accepted by SERC on August 9, 2011 and approved by NERC on September 8, 2011. The Mitigation Plan for this violation is designated as SERCMIT004754 and was submitted as non-public information to FERC on September 9, 2011 in accordance with FERC orders. The Mitigation Plan for TOP-007-0 R1 was accepted by SERC on December 19, 2011 and approved by NERC on January 22, 2012. The Mitigation Plan for this violation is designated as SERCMIT004756 and was submitted as non-public information to FERC on January 26, 2012 in accordance with FERC orders.

LG&E & KU Mitigation Plan required LG&E & KU's to:

1. Develop training plan, including training materials and content.

²³ The Mitigation Plan for TOP-002-2a R16 also references a violation of TOP-002-2a R17. However, SERC dismissed the possible violation of R17.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 18

2. Provide training addressing LG&E & KU policies relevant to compliance with TOP-002-2a R16.2. The training supplemented the annual training for transmission system operators, the managers to whom those personnel directly report, and the appropriate senior managers;
3. Reorganize the system operations desk to include only senior operators, who received additional training; and
4. Assign the responsibility for monitoring LG&E & KU's State Estimator and Contingency Analysis applications to the system operations desk.

LG&E & KU certified on July 29, 2011 that the above TOP-002-2a R16 and TOP-007-0 R1 Mitigation Plan requirements were completed on June 27, 2011.²⁴ As evidence of completion of its Mitigation Plan, LG&E & KU submitted the following:

1. Attendance rosters and the materials used for the training sessions;
2. An email confirming the completion of the reorganization of the system operations desk;
3. The systems operations desk procedure, which contains the tasks of monitoring the State Estimator and Contingency Analysis; and
4. Attendance roster and the materials used for the additional senior operator training session.

On August 18, 2011, after SERC's review of LG&E & KU's submitted evidence, SERC verified that LG&E & KU's TOP-002-2a R16 Mitigation Plan was completed on June 27, 2011. On January 17, 2012, after SERC's review of LG&E & KU's submitted evidence, SERC verified that LG&E & KU's TOP-007-0 R1 Mitigation Plan was completed on June 27, 2011.

FAC-009-1 R1 (SERC201000607)

LG&E & KU Mitigation Plan to address its violation of FAC-009-1 R1 was submitted to SERC on January 25, 2011 with a proposed completion of December 31, 2011. The Mitigation Plan was accepted by SERC on October 19, 2011 and approved by NERC on November 15, 2011. The Mitigation Plan for this violation is designated as SERCMIT004757 and was submitted as non-public information to FERC on November 18, 2011 in accordance with FERC orders.

²⁴ The Disposition Document states that the TOP-007-0 R1 violation was mitigated as of January 14, 2011.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 19

LG&E & KU's Mitigation Plan required LG&E & KU to:

1. Upgrade its outage request software to include a required field to identify any Facility Ratings impact associated with an outage request. Additionally, outage requests are now evaluated by LG&E & KU's operations engineering prior to scheduling the outage; and
2. Implement Cascade, a new software tool to replace LG&E & KU's Facility Rating Program,²⁵ and trained the appropriate personnel on the use and implementation of Cascade.

LG&E & KU certified on January 3, 2012 that the above Mitigation Plan requirements were completed on December 29, 2011. As evidence of completion of its Mitigation Plan, LG&E & KU submitted the following:

1. Visual of the rating impact field in the outage request software;
2. Emails verifying the installation of Cascade; and
3. Attendance rosters and the materials used for the Cascade training sessions.

On March 9, 2012, after SERC review of LG&E & KU's submitted evidence, SERC verified that LG&E & KU's Mitigation Plan was completed on December 29, 2011.

Statement Describing the Assessed Penalty, Sanction or Enforcement Action Imposed²⁶

Basis for Determination

Taking into consideration the Commission's direction in Order No. 693, the NERC Sanction Guidelines and the Commission's July 3, 2008, October 26, 2009 and August 27, 2010 Guidance Orders,²⁷ the NERC BOTCC reviewed the Settlement Agreement and supporting documentation on June 11, 2012. The NERC BOTCC approved the Settlement Agreement, including SERC's assessment of a seventy-five

²⁵The new Cascade program allows field personnel, such as qualified technicians and engineers, to have access to the equipment database, tie records together, see trends and evaluate information, including ratings, for individual assets within the transmission system. Also, Cascade has the capability to update and advise operators when ratings for the system drop.

²⁶ See 18 C.F.R. § 39.7(d)(4).

²⁷ *North American Electric Reliability Corporation*, "Guidance Order on Reliability Notices of Penalty," 124 FERC ¶ 61,015 (2008); *North American Electric Reliability Corporation*, "Further Guidance Order on Reliability Notices of Penalty," 129 FERC ¶ 61,069 (2009); *North American Electric Reliability Corporation*, "Notice of No Further Review and Guidance Order," 132 FERC ¶ 61,182 (2010).

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 20

thousand dollar (\$75,000) financial penalty against LG&E & KU and other actions to facilitate future compliance required under the terms and conditions of the Settlement Agreement. In approving the Settlement Agreement, the NERC BOTCC reviewed the applicable requirements of the Commission-approved Reliability Standards and the underlying facts and circumstances of the violations at issue.

In reaching this determination, the NERC BOTCC considered the following factors:

1. LG&E & KU self-reported the violations;
2. LG&E & KU has a prior history of noncompliance, as discussed above, which were considered a neutral factor when determining the penalty amount;
3. SERC reported that LG&E & KU was cooperative throughout the compliance enforcement process;
4. LG&E & KU had a compliance program at the time of the violation which SERC considered a mitigating factor, as discussed above;
5. there was no evidence of any attempt to conceal a violation nor evidence of intent to do so;
6. SERC determined that the violations did not pose a serious or substantial risk to the reliability of the BPS, as discussed above; and
7. SERC reported that there were no other mitigating or aggravating factors or extenuating circumstances that would affect the assessed penalty.

For the foregoing reasons, the NERC BOTCC approved the Settlement Agreement and believes that the assessed penalty of seventy-five thousand dollars (\$75,000) is appropriate for the violations and circumstances at issue, and is consistent with NERC's goal to promote and ensure reliability of the BPS.

Pursuant to 18 C.F.R. § 39.7(e), the penalty will be effective upon expiration of the 30 day period following the filing of this Notice of Penalty with FERC, or, if FERC decides to review the penalty, upon final determination by FERC.

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 21

Attachments to be Included as Part of this Notice of Penalty

The attachments to be included as part of this Notice of Penalty are the following documents:

- a) Settlement Agreement by and between SERC and LG&E & KU executed June 13, 2012, included as Attachment a;
 - a. Disposition Documents, Information Common to Instant Violations, included as Attachment A;
 - b. Disposition Document for Violations and SERC201000604 and SERC201000606, included as Attachment B;²⁸
 - c. Disposition Document for Violations and SERC201000607, included as Attachment C;²⁹
 - d. Disposition Document for Violations SERC201000584, SERC201000585, SERC201000578 and SERC201000601, included as Attachment D;³⁰
- b) Record documents for the violations of VAR-002-1 and VAR-002-1.1a, included as Attachment b:
 - 1. LG&E & KU Self-Report for VAR-002-1 R1 dated July 30, 2010;
 - 2. LG&E & KU Self-Report for VAR-002-1 R3 dated July 30, 2010;
 - 3. LG&E & KU Self-Report for VAR-002-1.1a R2 dated July 19,2010;
 - 4. LG&E & KU Self-Report for VAR-002-1.1a R3 dated August 24,2010;
 - 5. LG&E & KU Mitigation Plan for VAR-002-1 R1 submitted on October 15, 2010;
 - 6. LG&E & KU Mitigation Plan for VAR-002-1 R3 submitted January 25, 2011;
 - 7. LG&E & KU Mitigation Plan for VAR-002-1.1a R2 submitted September 28, 2010;
 - 8. LG&E & KU Mitigation Plan for VAR-002-1.1a R3 submitted October 15, 2010;
 - 9. LG&E & KU Certification of Mitigation Plan for VAR-002-1 R1 submitted August 8, 2011;
 - 10. LG&E & KU Certification of Mitigation Plan for VAR-002-1 R3 submitted January 26, 2011;

²⁸ The Disposition Document also serves as SERC's Verification of Mitigation Plan Completion.

²⁹ *Id.*

³⁰ *Id.*

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 22

11. LG&E & KU Certification of Mitigation Plan for VAR-002-1.1a R2 submitted August 8, 2011; and
 12. LG&E & KU Certification of Mitigation Plan for VAR-002-1.1a R3 submitted January 28, 2011;
- c) Record documents for the violations of TOP-002-2a and TOP-007-0, included as Attachment c:
1. LG&E & KU Self-Report for TOP-002-2a R16 dated August 31, 2010;
 2. LG&E & KU Self-Report for TOP-007-0 R1 dated August 31, 2010;
 3. LG&E & KU Mitigation Plan for TOP-002-2a R16 submitted on January 25, 2011;
 4. LG&E & KU Mitigation Plan for TOP-007-0 R1 submitted on January 25, 2011;
 5. LG&E & KU Certification of Completed Mitigation Plan for TOP-002-2a R16 dated July 29, 2011; and
 6. LG&E & KU Certification of Completed Mitigation Plan for TOP-007-0 R1 dated July 29, 2011
- d) Record documents for the violation of FAC-009-1 R1, included as Attachment d:
1. LG&E & KU Self-Report for FAC-009-1 R1 dated August 31, 2010;
 2. LG&E & KU Mitigation Plan for FAC-009-1 R1 submitted on January 25, 2011; and
 3. LG&E & KU Certification of Completed Mitigation Plan for FAC-009-1 R1 dated January 3, 2012.

A Form of Notice Suitable for Publication³¹

A copy of a notice suitable for publication is included in Attachment e.

³¹ See 18 C.F.R § 39.7(d)(6).

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 23

Notices and Communications: Notices and communications with respect to this filing may be addressed to the following:

<p>Gerald W. Cauley President and Chief Executive Officer North American Electric Reliability Corporation 3353 Peachtree Road NE Suite 600, North Tower Atlanta, GA 30326-1001 (404) 446-2560</p> <p>David N. Cook* Senior Vice President and General Counsel North American Electric Reliability Corporation 1325 G Street N.W., Suite 600 Washington, D.C. 20005 (202) 400-3000 (202) 644-8099 – facsimile david.cook@nerc.net</p> <p>Steven D. Phillips* Director of Compliance and Ethics LG&E and KU Services Company 220 West Main Street Louisville, KY 40202 (502) 627-2648 (502) 217-2775 - facsimile steven.phillips@lge-ku.com</p>	<p>Rebecca J. Michael* Associate General Counsel for Corporate and Regulatory Matters North American Electric Reliability Corporation 1325 G Street, N.W. Suite 600 Washington, DC 20005 (202) 400-3000 (202) 644-8099 – facsimile rebecca.michael@nerc.net</p> <p>Marisa A. Sifontes* General Counsel Maggie A. Sallah* Senior Counsel SERC Reliability Corporation 2815 Coliseum Centre Drive, Suite 500 Charlotte, NC 28217 (704) 494-7775 (704) 357-7914 – facsimile msifontes@serc1.org msallah@serc1.org</p> <p>John R. Twitchell* VP and Chief Program Officer SERC Reliability Corporation 2815 Coliseum Centre Drive, Suite 500 Charlotte, NC 28217 (704) 940-8205 (704) 357-7914 – facsimile jtwitchell@serc1.org</p>
---	---

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 24

Jennifer M. Keisling*
Sr. Corporate Attorney
LG&E and KU Services Company
220 West Main Street
Louisville, KY 40202
(502) 627-4303
(502) 627-3367 - facsimile
Jennifer.keisling@lge-ku.com

*Persons to be included on the Commission's service list are indicated with an asterisk. NERC requests waiver of the Commission's rules and regulations to permit the inclusion of more than two people on the service list.

Andrea B. Koch*
Manager, Compliance Enforcement
SERC Reliability Corporation
2815 Coliseum Centre Drive, Suite 500
Charlotte, NC 28217
(704)940-8219
(704) 357-7914 – facsimile
akoch@serc1.org

NERC Notice of Penalty

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

June 29, 2012

Page 25

Conclusion

NERC respectfully requests that the Commission accept this Notice of Penalty as compliant with its rules, regulations and orders.

Respectfully submitted,

/s/ Rebecca J. Michael

Rebecca J. Michael
Associate General Counsel for Corporate
and Regulatory Matters
North American Electric Reliability
Corporation
1325 G Street, N.W.
Suite 600
Washington, DC 20005
(202) 400-3000
(202) 644-8099 – facsimile
rebecca.michael@nerc.net

Gerald W. Cauley
President and Chief Executive Officer
North American Electric Reliability Corporation
3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326-1001
(404) 446-2560

David N. Cook
Senior Vice President and General Counsel
North American Electric Reliability
Corporation
1325 G Street N.W., Suite 600
Washington, D.C. 20005
(202) 400-3000
(202) 644-8099 – facsimile
david.cook@nerc.net

cc:

LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company
SERC Reliability Corporation

Attachments

Attachment a

Settlement Agreement by and between SERC and LG&E & KU executed June 13, 2012

SETTLEMENT AGREEMENT
OF
SERC RELIABILITY CORPORATION
AND
LG&E and KU SERVICES COMPANY

I. INTRODUCTION

1. SERC Reliability Corporation (“SERC”) and LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company (“LG&E & KU”) enter into this Settlement Agreement (“Settlement Agreement”) to resolve all outstanding issues arising from a preliminary and non-public assessment resulting in SERC’s determination and findings, pursuant to the North American Electric Reliability Corporation (“NERC”) Rules of Procedure, of seven confirmed violations.

Reliability Standard	Requirement	SERC Tracking No.	NERC Violation ID
VAR-002-1	R1	SERC2010-400688	SERC201000584
VAR-002-1	R3	SERC2010-400689	SERC201000585
VAR-002-1.1a	R2	SERC2010-400673	SERC201000578
VAR-002-1.1a	R3	SERC2010-400705	SERC201000601
TOP-002-2a	R16	SERC2010-400712	SERC201000604
TOP-007-0	R1	SERC2010-400714	SERC201000606
FAC-009-1	R1	SERC2010-400715	SERC201000607

2. LG&E & KU neither admits nor denies the seven violations and has agreed to the proposed penalty of seventy-five thousand dollars (\$75,000) in addition to other remedies and actions to mitigate the instant violations and to ensure future compliance under the terms and conditions of the Settlement Agreement.

II. STIPULATION

3. The facts stipulated herein are stipulated solely for the purpose of resolving, between LG&E & KU and SERC, the matters discussed herein and do not constitute stipulations or admissions for any other purpose. LG&E & KU and SERC hereby stipulate and agree to the following:

Background

4. See Section I of the Common Disposition document (Attachment A) for a description of LG&E & KU.

Violations of NERC Reliability Standards

5. See Section I of the relative Disposition documents (Attachments B, C and D) for the description of the violations.

III. PARTIES' SEPARATE REPRESENTATIONS

Statement of SERC and Summary of Findings

6. SERC staff determined that for one hour on May 28, 2010, LG&E & KU, as a Generator Operator ("GOP"), was in violation of VAR-002-1.1a because it failed to maintain the Transmission Operator's ("TOP") established bus voltage schedule.
7. SERC staff determined that from August 2, 2007 and until August 17, 2010, LG&E & KU, as a GOP, was in violation of VAR-002-1 R1 because it operated six generators in a mode other than automatic voltage control without notifying the TOP.
8. SERC staff determined that from January 12, 2008 until July 28, 2010, LG&E & KU, as a GOP, was in violation of VAR-002-1 R3 because it failed to notify the TOP within 30 minutes after a generator's capability change.
9. SERC staff determined that from July 30, 2010 until August 2, 2010, LG&E & KU as a GOP, was in violation of VAR-002-1.1a R3 because it failed to notify the TOP within 30 minutes after the change in status in the generator's reactive power capability.
10. SERC staff determined that from May 27, 2010 until July 23, 2010, LG&E & KU, as a TOP, was in violation of TOP-002-2a R16 because it failed to timely notify its Reliability Coordinator ("RC") of a change in transmission facility rating.
11. SERC staff determined that from July 22, 2010 through July 23, 2010, LG&E & KU, as a TOP, was in violation of TOP-007-0 R1 because it did not inform the RC of the System Operating Limit ("SOL") exceedance under an N-1 as required by the RC.
12. SERC staff determined that from May 27, 2010 through July 20, 2010, LG&E & KU, as a Transmission Owner, was in violation of FAC-009-1 R1 because it failed to establish a Facility Rating consistent with its Facility Rating Methodology.
13. SERC staff determined that the violations did not pose a serious or substantial risk to the bulk power system ("BPS") as discussed in the Disposition documents.
14. SERC agrees that this Settlement Agreement is in the best interest of the parties and in the best interest of BPS reliability.

Statement of LG&E & KU

15. LG&E & KU neither admits nor denies that the facts set forth and agreed to by the parties for purposes of this Settlement Agreement constitute violations of VAR-002-1 R1 and R3, VAR-002-1.1a R2 and R3, TOP-002-2a R16, TOP-007-0 R1 and FAC-009-1 R1.
16. LG&E & KU has agreed to enter into this Settlement Agreement with SERC to avoid extended litigation with respect to the matters described or referred to herein, to avoid uncertainty, and to effectuate a complete and final resolution of the issues set forth herein. LG&E & KU agrees that this Settlement Agreement is in the best interest of the parties and in the best interest of BPS reliability.

IV. MITIGATING ACTIONS, REMEDIES AND SANCTIONS

17. SERC and LG&E & KU agree that LG&E & KU has completed and SERC has verified the completion of the mitigating actions set forth in Section III of the relative Disposition documents (Attachment B, C and D). The Mitigating Actions, Remedies and Sanctions are discussed in detail in the relative Disposition documents (Attachment B, C and D).
18. SERC staff also considered the specific facts and circumstances of the violations and LG&E & KU's actions in response to the violations in determining a proposed penalty that meets the requirement in Section 215 of the Federal Power Act that "[a]ny penalty imposed under this section shall bear a reasonable relation to the seriousness of the violation and shall take into consideration the efforts of an entity to remedy the violation in a timely manner."¹ The factors considered by SERC staff in the determination of the appropriate penalty are set forth in Section II of the Common Disposition document.
19. Based on the above factors, as well as the mitigation actions and preventative measures taken, LG&E & KU shall pay seventy-five thousand dollars (\$75,000) to SERC as set forth in this Settlement Agreement. LG&E & KU shall remit the payment to SERC via check, or by wire transfer to an account to be identified by SERC within thirty days after the Agreement is either approved by the Federal Energy Regulatory Commission ("Commission") or by operation of law. SERC shall notify NERC, and NERC shall notify the Commission, if the payment is not timely received. If LG&E & KU does not remit the payment by the required date, interest payable to SERC will begin to accrue pursuant to the Commission's regulations at 18 C.F.R. §35.19a(a)(2)(iii) from the date that payment is due, and shall be payable in addition to the payment.

¹ 16 U.S.C. § 824o(e)(6).

20. Failure to make a timely penalty payment or to comply with any of the terms and conditions agreed to herein, or any other conditions of this Settlement Agreement shall be deemed to be either the same alleged violations that initiated this Settlement Agreement and/or additional violations and may subject LG&E & KU to new or additional enforcement, penalty or sanction actions in accordance with the NERC Rules of Procedure. LG&E & KU shall retain all rights to defend against such additional enforcement actions in accordance with NERC Rules of Procedure.

V. ADDITIONAL TERMS

21. The signatories to the Settlement Agreement agree that they enter into the Settlement Agreement voluntarily and that, other than the recitations set forth herein, no tender, offer or promise of any kind by any member, employee, officer, director, agent or representative of SERC or LG&E & KU has been made to induce the signatories or any other party to enter into the Settlement Agreement. The signatories agree that the terms and conditions of this Settlement Agreement are consistent with the Commission's regulations and orders, and NERC's Rules of Procedure.
22. SERC shall report the terms of all settlements of compliance matters to NERC. NERC will review the settlement for the purpose of evaluating its consistency with other settlements entered into for similar violations or under other, similar circumstances. Based on this review, NERC will either approve the settlement or reject the settlement and notify SERC and LG&E & KU of changes to the settlement that would result in approval. If NERC rejects the settlement, NERC will provide specific written reasons for such rejection and SERC will attempt to negotiate a revised settlement agreement with LG&E & KU including any changes to the settlement specified by NERC. If a settlement cannot be reached, the enforcement process shall continue to conclusion. If NERC approves the settlement, NERC will (i) report the approved settlement to the Commission for the Commission's review and approval by order or operation of law and (ii) publicly post this Settlement Agreement.
23. This Settlement Agreement shall become effective upon the Commission's approval of the Settlement Agreement by order or operation of law as submitted to it or as modified in a manner acceptable to the parties.
24. LG&E & KU agrees that this Settlement Agreement, when approved by NERC and the Commission, shall represent a final settlement of all matters set forth herein and LG&E & KU waives its right to further hearings and appeal, unless and only to the extent that LG&E & KU contends that any NERC or Commission action on the Settlement Agreement contains one or more material modifications to the Settlement Agreement. SERC reserves all rights to initiate enforcement, penalty or sanction actions against LG&E & KU in accordance with the NERC Rules of Procedure in the event that LG&E & KU does not comply with the Mitigation Plans and compliance program agreed to in this Settlement Agreement. In the event LG&E & KU fails to comply with any of the stipulations, remedies, sanctions or additional terms, as set

forth in this Settlement Agreement, SERC will initiate enforcement, penalty, or sanction actions against LG&E & KU to the maximum extent allowed by the NERC Rules of Procedure, up to the maximum statutorily allowed penalty. Except as otherwise specified in this Settlement Agreement, LG&E & KU shall retain all rights to defend against such enforcement actions, also according to the NERC Rules of Procedure.

25. LG&E & KU consents to the use of SERC's determinations, findings, and conclusions set forth in this Settlement Agreement for the purpose of assessing the factors, including the factor of determining the company's history of violations, in accordance with the NERC Sanction Guidelines and applicable Commission orders and policy statements. Such use may be in any enforcement action or compliance proceeding undertaken by NERC and/or any Regional Entity; provided, however, that LG&E & KU does not consent to the use of the specific acts set forth in this Settlement Agreement as the sole basis for any other action or proceeding brought by NERC and/or SERC, nor does LG&E & KU consent to the use of this Settlement Agreement by any other party in any other action or proceeding.
26. Each of the undersigned warrants that he or she is an authorized representative of the entity designated, is authorized to bind such entity and accepts the Settlement Agreement on the entity's behalf.
27. The undersigned representative of each party affirms that he or she has read the Settlement Agreement, that all of the matters set forth in the Settlement Agreement are true and correct to the best of his or her knowledge, information and belief, and that he or she understands that the Settlement Agreement is entered into by such party in express reliance on those representations, provided, however, that such affirmation by each party's representative shall not apply to the other party's statements of position set forth in Section III of this Settlement Agreement.
28. The Settlement Agreement may be signed in counterparts.
29. This Settlement Agreement is executed in duplicate, each of which so executed shall be deemed to be an original.

*Remainder of page intentionally blank.
Signatures to be affixed to the following page.*

*Remainder of page intentionally blank.
Signatures to be affixed to the following page.*

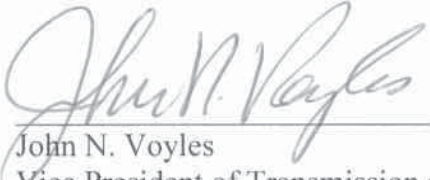
Agreed to and accepted:



R. Scott Henry
President and Chief Executive Officer
SERC RELIABILITY CORPORATION



Date



John N. Voyles
Vice President of Transmission and Generation Services
LG&E and KU SERVICES COMPANY



Date

Disposition Documents, Information Common to Instant Violations

DISPOSITION OF VIOLATION¹
INFORMATION COMMON TO INSTANT VIOLATIONS
Dated June 13, 2012

REGISTERED ENTITY
Louisville Gas and Electric Company
and Kentucky Utilities Company
(LG&E & KU)

NERC REGISTRY ID
NCR01223

NOC#
NOC-1404

REGIONAL ENTITY
SERC Reliability Corporation (SERC)

I. REGISTRATION INFORMATION

ENTITY IS REGISTERED FOR THE FOLLOWING FUNCTIONS IN THE SERC
REGION (BOTTOM ROW INDICATES REGISTRATION DATE):

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
x	x	x	x	x	x	x	x		x		x	x	x	x
03/31/07	05/31/07	05/31/07	05/31/07	03/20/08	05/31/07	05/31/07	05/31/07		05/31/07		05/31/07	05/31/07	05/31/07	05/31/07

DESCRIPTION OF THE REGISTERED ENTITY

LG&E and KU Services Company² as agent for Louisville Gas and Electric Company and Kentucky Utilities Company is a diversified energy services company serving 77 counties in Kentucky and 5 counties in Virginia, and is headquartered in Louisville, KY.

LG&E & KU, as a Generator Operator, operates 45 generators with a net generation capacity of approximately 8300 MWs.

LG&E & KU, as a Transmission Owner and Transmission Operator, owns and operates 4,747 miles of Transmission lines consisting of the following: 57 miles of 500 kV, 508 miles of 345 kV, 583 miles of 161 kV, 1,144 miles of 138 kV and 2,455 miles of 69 kV.

¹ For purposes of this document and attachments hereto, each violation at issue is described as a "violation," regardless of its procedural posture and whether it was a possible, alleged or confirmed violation.

² At the time the violations occurred, LG&E & KU was owned by E.ON, headquartered in Dusseldorf, Germany, and was doing business as E.ON. U.S. Services, Inc. By letter dated September 30, 2010, E.ON U.S. Services, Inc informed SERC that effective immediately its name had been changed to LG&E and KU Services Company. For the purposes of this disposition document, the Registered Entity will be referred to as "LG&E & KU."

IS THERE A SETTLEMENT AGREEMENT YES ☒ NO ☐

WITH RESPECT TO THE VIOLATION(S), REGISTERED ENTITY

NEITHER ADMITS NOR DENIES IT (SETTLEMENT ONLY) YES ☒
 ADMITS TO IT YES ☐
 DOES NOT CONTEST IT (INCLUDING WITHIN 30 DAYS) YES ☐

WITH RESPECT TO THE ASSESSED PENALTY OR SANCTION, REGISTERED ENTITY

ACCEPTS IT/ DOES NOT CONTEST IT YES ☒

II. PENALTY INFORMATION

TOTAL ASSESSED PENALTY OR SANCTION OF **SEVENTY-FIVE THOUSAND DOLLARS (\$75,000)** FOR **SEVEN** VIOLATIONS OF RELIABILITY STANDARDS.

(1) REGISTERED ENTITY'S COMPLIANCE HISTORY

PREVIOUSLY FILED VIOLATIONS OF ANY OF THE INSTANT
 RELIABILITY STANDARD(S) OR REQUIREMENT(S) THEREUNDER IN
 THE SERC REGION
 YES ☒ NO ☐

LIST VIOLATIONS AND STATUS

LG&E & KU has had two previous violations of VAR-002 R2, which were filed with FERC in Notice of Penalty (NP) 11-97-000 on January 31, 2011, and NP 10-120-000 on July 6, 2010. FERC issued its Notice on March 2, 2011 and August 5, 2010, respectively, stating it would take no further action.

ADDITIONAL COMMENTS

Pursuant to the August 27, 2010 FERC Notice of No Further Review and Guidance Order 132 FERC ¶ 61,182, the VAR violations are considered repeat violations because they involve the same Registered Entity and the same NERC Reliability Standard.

PREVIOUSLY FILED VIOLATIONS OF OTHER RELIABILITY
 STANDARD(S) OR REQUIREMENTS THEREUNDER IN THE SERC
 REGION
 YES ☒ NO ☐

LIST VIOLATIONS AND STATUS

LG&E & KU has had previous violations of FAC-001 R1, R2, and R3 and EOP-008 R1, which were filed with FERC in NP09-2-000 on December 12, 2008. On January 9, 2009, FERC issued its Notice stating it would take no further action. LG&E & KU has had previous violations of PRC-005 R1 and R2, and FAC 008 R1, which were filed with

FERC in NP-10-120-000 on July 6, 2010. On August 5, 2010, FERC issued its Notice stating it would take no further action.

ADDITIONAL COMMENTS

(2) THE DEGREE AND QUALITY OF COOPERATION BY THE REGISTERED ENTITY (IF THE RESPONSE TO FULL COOPERATION IS "NO," THE ABBREVIATED NOP FORM MAY NOT BE USED.)

FULL COOPERATION YES ☒ NO ☐
IF NO, EXPLAIN

(3) THE PRESENCE AND QUALITY OF THE REGISTERED ENTITY'S COMPLIANCE PROGRAM

IS THERE A DOCUMENTED COMPLIANCE PROGRAM

YES ☒ NO ☐

EXPLAIN

Based on LG&E & KU's August 19, 2011 responses to SERC's Compliance Culture Questionnaire (CCQ), LG&E & KU has a documented internal compliance program (ICP), which provides the framework for its internal compliance structure. The ICP is reviewed and modified, if necessary, on an annual basis. The ICP requires that all senior management be responsible for ensuring that their subordinates cooperate, are aware of, and understand the ICP.

EXPLAIN SENIOR MANAGEMENT'S ROLE AND INVOLVEMENT WITH RESPECT TO THE REGISTERED ENTITY'S COMPLIANCE PROGRAM, INCLUDING WHETHER SENIOR MANAGEMENT TAKES ACTIONS THAT SUPPORT THE COMPLIANCE PROGRAM, SUCH AS TRAINING, COMPLIANCE AS A FACTOR IN EMPLOYEE EVALUATIONS, OR OTHERWISE.

Based on LG&E & KU's August 19, 2011 responses to SERC's CCQ, LG&E & KU has a strong culture of senior management involvement in the compliance program. The Steering Committee, which meets monthly and is comprised of approximately 15 officers and other senior managers, approves and reviews the ICP, assigns roles, and monitors all activities related to compliance. LG&E & KU's Compliance Department is responsible maintaining and implementing the ICP. The Director of Compliance and Ethics, who is also LG&E & KU's Compliance Officer, has oversight of the ICP and independent access to the CEO. The existence of LG&E & KU's compliance program was a mitigating factor in determining the penalty.

(4) ANY ATTEMPT BY THE REGISTERED ENTITY TO CONCEAL THE VIOLATION(S) OR INFORMATION NEEDED TO REVIEW, EVALUATE OR INVESTIGATE THE VIOLATION.

YES ☐ NO ☒
IF YES, EXPLAIN

(5) ANY EVIDENCE THE VIOLATION(S) WERE INTENTIONAL (IF THE RESPONSE IS "YES," THE ABBREVIATED NOP FORM MAY NOT BE USED.)

YES ☐ NO ☒
IF YES, EXPLAIN

(6) ANY OTHER MITIGATING FACTORS FOR CONSIDERATION

YES ☐ NO ☒
IF YES, EXPLAIN

(7) ANY OTHER AGGRAVATING FACTORS FOR CONSIDERATION

YES ☐ NO ☒
IF YES, EXPLAIN

(8) ANY OTHER EXTENUATING CIRCUMSTANCES

YES ☐ NO ☒
IF YES, EXPLAIN

OTHER RELEVANT INFORMATION:

NOTICE OF ALLEGED VIOLATION AND PROPOSED PENALTY OR
SANCTION ISSUED

DATE: OR N/A ☒

SETTLEMENT DISCUSSIONS COMMENCED

DATE: 1/20/12 OR N/A ☐

NOTICE OF CONFIRMED VIOLATION ISSUED

DATE: OR N/A ☒

SUPPLEMENTAL RECORD INFORMATION

DATE(S) OR N/A ☒

REGISTERED ENTITY RESPONSE CONTESTED

FINDINGS ☐ PENALTY ☐ BOTH ☐ NO CONTEST ☒

HEARING REQUESTED

YES ☐ NO ☒

DATE

OUTCOME

APPEAL REQUESTED

SETTLEMENT AGREEMENT BETWEEN SERC AND LG&E & KU, executed
June 13, 2012

Disposition Document for Violations and SERC201000604 and SERC201000606

DISPOSITION OF VIOLATION¹

Dated June 13, 2012

NERC TRACKING NO. SERC TRACKING NO.
 SERC201000604 SERC2010-400712
 SERC201000606 SERC2010-400714

I. VIOLATION INFORMATION

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
TOP-002-2a	16		High	Severe
TOP-007-0	1		High	Severe

VIOLATION(S) APPLIES TO THE FOLLOWING FUNCTIONS IN THE SERC REGION:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
												X		

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

The purpose statement of TOP-002-2a provides:

“Current operations plans and procedures are essential to being prepared for reliable operations, including response for unplanned events.”

TOP-002-2a provides:

R16 Subject to standards of conduct and confidentiality agreements, Transmission Operators shall, without any intentional time delay, notify their Reliability Coordinator and Balancing Authority of changes in capabilities and characteristics including but not limited to:

R16.1 Changes in transmission facility status.

R16.2 Changes in transmission facility rating.

The purpose statement of TOP-007-0 provides:

“This standard ensures SOL and IROL violations are being reported to the Reliability Coordinator so that the Reliability Coordinator may evaluate actions being taken and direct additional corrective actions as needed.”

¹ For purposes of this document and attachments hereto, each violation at issue is described as a “violation,” regardless of its procedural posture and whether it was a possible, alleged or confirmed violation.

TOP-007-0 provides:

R1 A Transmission Operator shall inform its Reliability Coordinator when an IROL or SOL has been exceeded and the actions being taken to return the system to within limits.

VIOLATION DESCRIPTION

TOP-002-2a R16 (SERC2010-400712):

On August 31, 2010, LG&E & KU, as a Transmission Owner (TO), self-reported that it failed to promptly communicate a change in a transformer rating to its Reliability Coordinator (RC), as required.

SERC learned that a new 138 kV Middletown-Collins line was being constructed and was expected to be placed into service in the fall of 2010. On May 27, 2010, equipment impacting Transformer 4 (TR4) at the LG&E & KU Middletown substation was reconfigured to address unplanned changes in the construction project, which resulted in a reduced Facility Rating. LG&E & KU updated its Facility Rating Program on June 30, 2010. The contingency analysis (CA) model was not updated with the new Facility Rating until July 20, 2010, when LG&E & KU's energy management system was updated. LG&E & KU's RC received the updated rating for TR4 on July 23, 2010.

On July 22, 2010, LG&E & KU discovered a discrepancy with regard to its CA model and the RC's CA model. LG&E & KU's CA model identified the exceedence of a system operating limit related to TR4 and the RC's CA model did not. Although there was no overload in real time, the discrepancy caused LG&E & KU to investigate the situation. LG&E & KU did not contact the RC until it completed its investigation and the cause of the discrepancy was known. According to LG&E & KU, it was prepared and had operating procedures in place outlining the real-time mitigation options in case the contingency occurred. LG&E & KU discovered that the discrepancy was caused by the rerating of TR4, which was reflected in LG&E & KU's CA model but not in the RC's CA model. Because the rerating of TR4 had not been communicated to the RC, it was not being reflected in the RC's CA model.

After the reason for the disparate analyses was identified, LG&E & KU did not immediately notify its RC of the problem or the cause, but instead began a technical review in order to identify solutions that would increase the TR4 rating and eliminate the exceedence of the system operating limit in its CA model. LG&E & KU determined that a solution could be completed before the next day's heavy load hours when the likelihood of the potential risk identified in its CA model was the greatest. At approximately 1900 on July 22, 2010, LG&E & KU submitted a request to the RC for an emergency overnight outage to perform the work. On July 23, 2010, following the completion of the work, the new TR4 rating was entered into LG&E & KU's CA model as well as the RC's CA model. At no time during LG&E & KU's evaluation or after the cause of the discrepancy was identified, did LG&E & KU communicate its concerns or results to the RC.

The actual configuration of TR4 and the resulting derating of TR4 should have been

updated in LG&E & KU's CA model and communicated to the RC at the time the reconfiguration occurred on May 27, 2010. Instead, it was not until July 20, 2010 that LG&E & KU updated its CA model to reflect the derated value for TR4. The contingency resulting in a possible exceedence of the Facility Rating was identified on July 22, 2010. At this point in time, the RC had still not been notified of the change in TR4's rating or the potential for over-loading of TR4 during specific N-1 contingency conditions. Once the contingency problem was recognized, LG&E & KU immediately completed work to lift the derating of TR4. LG&E & KU also had operating procedures in place to react to the contingency. While the real-time loading of TR4 never exceeded the Facility Rating, results from the analysis requested by SERC indicated that the contingency may have been present but not identified for as many as 30 days over the period May 27, 2010 through July 22, 2010. SERC determined that LG&E & KU, as a TOP, was in violation of TOP-002-2a R16 because it failed to timely notify its RC of a change in transmission Facility Rating.

SERC assessed a Violation Severity Level (VSL) of "Severe" in accordance with the May 3, 2010 VSL Matrix because LG&E & KU failed to notify its Reliability Coordinator of changes in transmission facility status.

TOP-007-0 R1 (SERC2010-400714):

On August 31, 2010, LG&E & KU, as a TOP, self-reported that it failed to inform the Reliability Coordinator (RC) when a System Operating Limit (SOL) was exceeded in real time contingency analysis, as required.

SERC learned that a new 138 kV Middletown-Collins line was being constructed and was expected to be placed into service in the fall of 2010. On May 27, 2010, equipment impacting Transformer 4 (TR4) at the LG&E & KU Middletown substation was reconfigured to address unplanned changes in the construction project, which resulted in a reduced Facility Rating. LG&E & KU updated its Facility Rating Program on June 30, 2010. The contingency analysis (CA) model was not updated with the new Facility Rating until July 20, 2010, when LG&E & KU's energy management system was updated. LG&E & KU's RC received the updated rating for TR4 on July 23, 2010.

On July 22, 2010, LG&E & KU discovered a discrepancy with regard to its CA model and the RC's CA model. LG&E & KU's CA model identified the exceedence of a system operating limit related to TR4 and the RC's CA model did not. Although there was no overload in real time, the discrepancy caused LG&E & KU to investigate the situation. LG&E & KU did not contact the RC until it completed its investigation and the cause of the discrepancy was known. According to LG&E & KU, it was prepared and had operating procedures in place outlining the real-time mitigation options in case the contingency occurred. LG&E & KU discovered that the discrepancy was caused by the rerating of TR4, which was reflected in LG&E & KU's CA model but not in the RC's CA model. Because the rerating of TR4 had not been communicated to the RC, it was not being reflected in the RC's CA model.

After the reason for the disparate analyses was identified, LG&E & KU did not immediately notify its RC of the problem or the cause, but instead began a technical review in order to identify solutions that would increase the TR4 rating and eliminate the exceedance of the system operating limit in its CA model. LG&E & KU determined that a solution could be completed before the next day's heavy load hours when the likelihood of the potential risk identified in its CA model was the greatest. At approximately 1900 on July 22, 2010, LG&E & KU submitted a request to the RC for an emergency overnight outage to perform the work. On July 23, 2010, following the completion of the work, the new TR4 rating was entered into LG&E & KU's CA model as well as the RC's CA model. At no time during LG&E & KU's evaluation or after the cause of the discrepancy was identified, LG&E & KU failed to communicate its concerns to the RC.

While the SOL could have been exceeded under a N-1 scenario, the SOL was never exceeded in real time. However, the RC's SOL Methodology requires that SOLs are set to meet Bulk Electric System performance for both pre-contingency and post-contingency states. Therefore, LG&E & KU was required to inform its RC when its model indicated that a Facility Rating would be exceeded under a first contingency scenario. SERC determined that LG&E & KU, as a TOP, was in violation of TOP-007-0 R1 because it did not inform the RC of the SOL exceedance under an N-1 as required by the RC.

SERC assessed a Violation Severity Level (VSL) of "Severe" in accordance with the May 3, 2010 VSL Matrix because the TOP failed to inform its Reliability Coordinator when a SOL had been exceeded.

RELIABILITY IMPACT STATEMENT- POTENTIAL AND ACTUAL

TOP-002-2a R16 (SERC2010-400712):

SERC determined that the violation posed a moderate risk to the reliability of the bulk power system because there was a risk of exceeding the established rating of TR4 had the specific N-1 contingency occurred. However, there was no real time overloading at any point and LG&E & KU had operating procedures in place to react to the contingency.

TOP-007-0 R1 (SERC2010-400714):

SERC determined that the issue posed a moderate risk to the reliability of the bulk power system (BPS) because:

1. While LG&E & KU's failure to report the pre-contingency SOL could have limited the RC's ability to evaluate and implement wide-area corrective actions had the contingency occurred, the SOL was never exceeded in real time;
2. LG&E & KU was prepared and had operating procedures in place outlining the real-time mitigation options in case the contingency occurred; and
3. LG&E & KU took prompt action to alleviate the cause of the contingency thereby minimizing the duration of the risk to the BPS.

II. DISCOVERY INFORMATION

METHOD OF DISCOVERY

SELF-REPORT	<input checked="" type="checkbox"/>
SELF-CERTIFICATION	<input type="checkbox"/>
COMPLIANCE AUDIT	<input type="checkbox"/>
COMPLIANCE VIOLATION INVESTIGATION	<input type="checkbox"/>
SPOT CHECK	<input type="checkbox"/>
COMPLAINT	<input type="checkbox"/>
PERIODIC DATA SUBMITTAL	<input type="checkbox"/>
EXCEPTION REPORTING	<input type="checkbox"/>

DURATION DATE(S)

TOP-002-2a R16 (SERC2010-400712): 5/27/10 (when LG&E & KU changed the TR4 configuration) until 7/23/10 (when LG&E & KU informed its RC of the new rating)

TOP-007-0 R1 (SERC2010-400714): 7/22/10 (the date the exceedence was discovered) until 7/23/10 (when the exceedence was no longer present)

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY 8/31/10

IS THE VIOLATION STILL OCCURRING YES ☐ NO ☒
IF YES, EXPLAIN

REMEDIAL ACTION DIRECTIVE ISSUED YES ☐ NO ☒
PRE TO POST JUNE 18, 2007 VIOLATION YES ☐ NO ☒

III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION PLAN for the SERC2010-400712 violation:

MITIGATION PLAN NO.	SERCMIT004754
DATE SUBMITTED TO REGIONAL ENTITY	1/25/11
DATE ACCEPTED BY REGIONAL ENTITY	8/9/11
DATE APPROVED BY NERC	9/8/11
DATE PROVIDED TO FERC	9/9/11

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE:

MITIGATION PLAN COMPLETED YES ☒ NO ☐

EXPECTED COMPLETION DATE	Submitted as complete
EXTENSIONS GRANTED	None
ACTUAL COMPLETION DATE	6/27/11

DATE OF CERTIFICATION LETTER: 7/29/11
 CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF 6/27/11

VERIFIED COMPLETE BY REGIONAL ENTITY AS OF 8/18/11²

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

LG&E & KU completed the following actions detailed in its Mitigation Plan:

1. Provided training addressing LG&E & KU policies relevant to compliance with TOP-002-2a R16.2. The training supplemented the annual training for transmission system operators, the managers to whom those personnel directly report, and the appropriate senior managers;
2. Reorganized the system operations desk to include only senior operators, who received additional training; and
3. Assigned the responsibility for monitoring the State Estimator and Contingency Analysis applications to the system operations desk.

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION PLAN (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)

1. Attendance rosters and the materials used for the training sessions;
2. An email confirming the completion of the reorganization of the system operations desk;
3. The systems operations desk procedure, which contains the tasks of monitoring the State Estimator and Contingency Analysis; and
4. Attendance roster and the materials used for the additional senior operator training session.

FOR FINAL ACCEPTED MITIGATION PLAN for the SERC2010-400714 violation:

MITIGATION PLAN NO.	SERCMIT004756
DATE SUBMITTED TO REGIONAL ENTITY	1/25/11
DATE ACCEPTED BY REGIONAL ENTITY	12/19/11
DATE APPROVED BY NERC	1/22/12
DATE PROVIDED TO FERC	1/26/12

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE:

MITIGATION PLAN COMPLETED YES ☒ NO ☐

EXPECTED COMPLETION DATE	Submitted as complete
EXTENSIONS GRANTED	
ACTUAL COMPLETION DATE	6/27/11

² This Disposition Document serves as SERC's Verification of Mitigation Plan Completion.

DATE OF CERTIFICATION LETTER: 7/29/11
CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF 1/14/11

VERIFIED COMPLETE BY REGIONAL ENTITY AS OF 1/17/12³

**ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT
RECURRENCE**

LG&E & KU completed the following actions detailed in its Mitigation Plan:

1. Provided training addressing LG&E & KU policies relevant to compliance with TOP-002-2a R16.2. The training supplemented the annual training for transmission system operators, the managers to whom those personnel directly report and the appropriate senior managers;
2. Reorganized the system operations desk to include only senior operators, who received additional training; and
3. Assigned the responsibility for monitoring the State Estimator and Contingency Analysis applications to the system operations desk.

**LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE
COMPLETION OF MITIGATION PLAN (FOR CASES IN WHICH
MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED
FOR COMPLETED MILESTONES)**

1. Attendance rosters and the materials used for the training sessions.
2. An email confirming the completion of the reorganization of the system operations desk;
3. The systems operations desk procedure, which contains the tasks of monitoring the State Estimator and Contingency Analysis; and
4. Attendance roster and the materials used for the additional senior operator training session.

EXHIBITS:

SOURCE DOCUMENT

LG&E & KU Self-Report dated August 31, 2010

MITIGATION PLAN

LG&E & KU Mitigation Plan submitted on January 25, 2011

CERTIFICATION BY REGISTERED ENTITY

LG&E & KU Certification of Completed Mitigation Plan dated July 29, 2011

VERIFICATION BY REGIONAL ENTITY

This Disposition document serves as SERC's Verification of Mitigation Plan Completion.

³ This Disposition Document serves as SERC's Verification of Mitigation Plan Completion.

Disposition Document for Violations and SERC201000607

DISPOSITION OF VIOLATION¹

Dated June 13, 2012

NERC TRACKING NO. SERC TRACKING NO.
SERC201000607 SERC2010-400715

I. VIOLATION INFORMATION

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
FAC-009-1	1		Medium	Lower

VIOLATION(S) APPLIES TO THE FOLLOWING FUNCTIONS IN THE SERC REGION:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
											X			

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

The purpose statement of FAC-009-1 provides:

“To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies.”

FAC-009-1 provides:

R1 The Transmission Owner and Generator Owner shall each establish Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings Methodology.

VIOLATION DESCRIPTION

On August 31, 2010, LG&E & KU, as a Transmission Owner (TO), self-reported that it failed to promptly communicate a change in a transformer rating to its Reliability Coordinator (RC), as required.

SERC learned that a new 138 kV Middletown-Collins line was being constructed and was expected to be placed into service in the fall of 2010. On May 27, 2010, equipment impacting Transformer 4 (TR4) at the LG&E & KU Middletown substation was reconfigured to address unplanned changes in the construction project, which resulted in a reduced facility rating. LG&E & KU updated its Facility Rating Program on June 30,

¹ For purposes of this document and attachments hereto, each violation at issue is described as a “violation,” regardless of its procedural posture and whether it was a possible, alleged or confirmed violation.

2010. The contingency analysis (CA) model was not updated with the new facility rating until July 20, 2010, when LG&E & KU's energy management system was updated. LG&E & KU's RC did not receive the updated rating for TR4 until July 23, 2010.

On July 22, 2010, LG&E & KU discovered a discrepancy with regard to its CA model and the RC's CA model. LG&E & KU's CA model identified the exceedance of a system operating limit related to TR4 and the RC's CA model did not. Although there was no overload in real time, the discrepancy caused LG&E & KU to investigate the situation. LG&E & KU did not contact the RC until it completed its investigation and the cause of the discrepancy was known. According to LG&E & KU, it was prepared and had operating procedures in place outlining the real-time mitigation options in case the contingency occurred. LG&E & KU discovered that the discrepancy was caused by the rerating of TR4, which was reflected in LG&E & KU's CA model but not in the RC's CA model. Because the rerating of TR4 had not been communicated to the RC, it was not being reflected in the RC's CA model.

After the reason for the disparate analyses was identified, LG&E & KU did not immediately notify its RC of the problem or the cause, but instead began a technical review in order to identify solutions that would increase the TR4 rating and eliminate the exceedance of the system operating limit in its CA model. LG&E & KU determined that a solution could be completed before the next day's heavy load hours when the likelihood of the potential risk identified in its CA model was the greatest. At approximately 1900 on July 22, 2010, LG&E & KU submitted a request to the RC for an emergency overnight outage to perform the work. On July 23, 2010, following the completion of the work, the new TR4 rating was entered into LG&E & KU's CA model as well as the RC's CA model. At no time during LG&E & KU's evaluation or after the cause of the discrepancy was identified, did LG&E & KU communicate its concerns or results to the RC.

Facility Ratings must be established in accordance with LG&E & KU's Facility Rating Methodology (FRM) and must reflect the most limiting element of the individual equipment that comprises that Facility. As soon as the reconfiguration of TR4 took place on May 27, 2010, LG&E & KU should have recalculated the Facility Rating in accordance with its FRM. The derated value for TR4 was not updated in LG&E & KU's Facility Rating Program until July 20, 2010. Results from the analysis requested by SERC indicated that the contingency may have been present but not identified for as many as 30 days over the period May 27, 2010 through July 22, 2010. While the real-time loading of TR4 never exceeded the facility rating, the N-1 contingency could have overloaded TR4 as rerated on May 27, 2010. LG&E & KU had operating procedures in place to react to this contingency had it occurred. SERC determined that LG&E & KU, as a TO, was in violation of FAC-009-1 R1 because it failed to establish a Facility Rating consistent with its FRM.

SERC assessed a Violation Severity Level (VSL) of "Lower" in accordance with the May 3, 2010 VSL Matrix because LG&E & KU Facility Ratings weren't consistent with the associated FRM in one minor area.

RELIABILITY IMPACT STATEMENT- POTENTIAL AND ACTUAL

SERC determined that the violation posed a moderate risk to the bulk power system because there was a risk of exceeding the established rating of transformer had the specific N-1 contingency occurred. However, there was no real time overloading and LG&E & KU had operating procedures in place to react to the contingency.

II. DISCOVERY INFORMATION**METHOD OF DISCOVERY**

SELF-REPORT	<input checked="" type="checkbox"/>
SELF-CERTIFICATION	<input type="checkbox"/>
COMPLIANCE AUDIT	<input type="checkbox"/>
COMPLIANCE VIOLATION INVESTIGATION	<input type="checkbox"/>
SPOT CHECK	<input type="checkbox"/>
COMPLAINT	<input type="checkbox"/>
PERIODIC DATA SUBMITTAL	<input type="checkbox"/>
EXCEPTION REPORTING	<input type="checkbox"/>

DURATION DATE(S)

5/27/10 (when LG&E & KU changed the TR4 configuration) until 7/20/10 (when LG&E & KU updated its Facility Ratings)

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY 8/31/10

IS THE VIOLATION STILL OCCURRING YES ☐ NO ☒
IF YES, EXPLAIN

REMEDIAL ACTION DIRECTIVE ISSUED YES ☐ NO ☒
PRE TO POST JUNE 18, 2007 VIOLATION YES ☐ NO ☒

III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION PLAN for the violation:

MITIGATION PLAN NO.	SERCMIT004757
DATE SUBMITTED TO REGIONAL ENTITY	1/25/11
DATE ACCEPTED BY REGIONAL ENTITY	10/19/11
DATE APPROVED BY NERC	11/15/11
DATE PROVIDED TO FERC	11/18/11

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE:

MITIGATION PLAN COMPLETED YES ☒ NO ☐

EXPECTED COMPLETION DATE	Submitted as complete
EXTENSIONS GRANTED	
ACTUAL COMPLETION DATE	12/29/11

DATE OF CERTIFICATION LETTER: 1/3/12
CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF 12/29/11

VERIFIED COMPLETE BY REGIONAL ENTITY AS OF 3/9/12²

**ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT
RECURRENCE**

LG&E & KU completed the following actions detailed in its Mitigation Plan:

1. Upgraded its outage request software to include a required field to identify any Facility Ratings impact associated with an outage request. Additionally, the outage request is now evaluated by operations engineering prior to scheduling the outage; and
2. Implemented Cascade, a new tool to replace the Facility Rating Program and trained the appropriate personnel on the use and implementation of Cascade.

**LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE
COMPLETION OF MITIGATION PLAN (FOR CASES IN WHICH
MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED
FOR COMPLETED MILESTONES)**

1. Visual of the rating impact field in the outage request software.
2. Emails verifying the installation of Cascade.
3. Attendance rosters and the materials used for the Cascade training sessions.

EXHIBITS:

SOURCE DOCUMENT

LG&E & KU Self-Report dated August 31, 2010

MITIGATION PLAN

LG&E & KU Mitigation Plan submitted on January 25, 2011

CERTIFICATION BY REGISTERED ENTITY

LG&E & KU Certification of Completed Mitigation Plan dated January 3, 2012

VERIFICATION BY REGIONAL ENTITY

This Disposition document serves as SERC's Verification of Mitigation Plan Completion.

² This Disposition Document serves as SERC's Verification of Mitigation Plan Completion.

**Disposition Document for Violations
SERC201000584, SERC201000585,
SERC201000578 and SERC201000601**

DISPOSITION OF VIOLATION¹

Dated June 13, 2012

NERC TRACKING NO. SERC TRACKING NO.

SERC201000578 SERC2010-400673

SERC201000584 SERC2010-400688

SERC201000585 SERC2010-400689

SERC201000601 SERC2010-400705

I. VIOLATION INFORMATION

RELIABILITY STANDARD	REQUIREMENT(S)	SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
VAR-002-1.1a ²	2		Medium	Lower
VAR-002-1	1		Medium	Severe
VAR-002-1	3		Medium	High
VAR-002-1.1a	3		Medium	High

VIOLATION(S) APPLIES TO THE FOLLOWING FUNCTIONS IN THE SERC REGION:

BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
			X											

PURPOSE OF THE RELIABILITY STANDARD AND TEXT OF RELIABILITY STANDARD AND REQUIREMENT(S)/SUB-REQUIREMENT(S)

The purpose statement of VAR-002-1 provides:

“To ensure generators provide reactive and voltage control necessary to ensure voltage levels, reactive flows, and reactive resources are maintained within applicable Facility Ratings to protect equipment and the reliable operation of the Interconnection.”

VAR-002-1 provides:

R1 The Generator Operator shall operate each generator connected to the interconnected transmission system in the automatic voltage control mode (automatic voltage regulator in service and controlling voltage) unless the Generator Operator has notified the Transmission Operator.

¹ For purposes of this document and attachments hereto, each violation at issue is described as a “violation,” regardless of its procedural posture and whether it was a possible, alleged or confirmed violation.

² SERC included the text from version 1 of the Reliability Standard since two of LG&E & KU’s violations apply from Version 1 through Version 1.1a of the Standard. The language of the Requirement remained the same in each version.

R2 Unless exempted by the Transmission Operator, each Generator Operator shall maintain the generator voltage or Reactive Power output (within applicable Facility Ratings¹) as directed by the Transmission Operator.

R2.1 When a generator's automatic voltage regulator is out of service, the Generator Operator shall use an alternative method to control the generator voltage and reactive output to meet the voltage or Reactive Power schedule directed by the Transmission Operator.

R2.2 When directed to modify voltage, the Generator Operator shall comply or provide an explanation of why the schedule cannot be met.

R3 Each Generator Operator shall notify its associated Transmission Operator as soon as practical, but within 30 minutes of any of the following:

R3.1 A status or capability change on any generator Reactive Power resource, including the status of each automatic voltage regulator and power system stabilizer and the expected duration of the change in status or capability.

R3.2 A status or capability change on any other Reactive Power resources under the Generator Operator's control and the expected duration of the change in status or capability.

VIOLATION DESCRIPTION

VAR-002-1.1a R2 (SERC2010-400673):

On July 19, 2010 LG&E & KU, as a Generator Operator (GOP), self-reported that a generator had not maintained the Transmission Operator's (TOP) required bus voltage schedule on May 28, 2010.

According to LG&E & KU, the generator involved is a 178 MW simple-cycle gas turbine that is used for peaking purposes. Prior to the week of the incident, the generator had not been operated since September 2009. The bus voltage schedule for the generator is 140kV +/- 1kV. For one hour, on May 28, 2010, the generator's integrated average voltage exceeded the tolerance in the established schedule and operated at 141.769 kV. SERC determined that LG&E & KU, as a GOP, was in violation of VAR-002-1.1a because it failed to maintain the TOP's established bus voltage schedule, as required.

SERC assessed a Violation Severity Level (VSL) of "Lower" in accordance with the August 24, 2009 VSL Matrix because LG&E & KU failed to maintain a voltage schedule for less than 25% of its generators.

VAR-002-1 R1 (SERC2010-400688):

On July 30, 2010, LG&E & KU self-reported that six generators had been operating with the Automatic Voltage Regulator (AVR) in automatic reactive power mode instead of automatic voltage control mode without notification to the TOP, as required.

According to LG&E & KU, the discovery was made while investigating the incident reported to SERC on July 19, 2010. Upon its review, LG&E & KU discovered that the 178 MW peaking generator had been operating with its AVR in automatic reactive power

mode since August 2, 2007. After finding this, LG&E & KU reviewed its remaining generators and found five additional generators that had been operating in automatic reactive power mode instead of automatic voltage control.

SERC learned that four out of the six generators are simple cycle combustion turbines. The two remaining generators are hydro units, which are exempted from the generator voltage requirement by the TOP. Five out of the six generators had been operating in automatic reactive power mode since August 2, 2007. The sixth generator had been operating in automatic reactive power mode since January 12, 2008. SERC determined that LG&E & KU, as a GOP, was in violation of VAR-002-1 R1 because it operated a generator in a mode other than automatic voltage control without notifying the TOP.

SERC assessed a Violation Severity Level (VSL) of “Lower” in accordance with the August 24, 2009 VSL Matrix because LG&E & KU operated less than 25% of its generators in a mode other than automatic voltage control without notifying the TOP.

VAR-002-1 R3 (SERC2010-400689):

On July 30, 2010, LG&E & KU self-reported that a generator had been retrofitted with an AVR and the TOP had not been notified of the capability change within 30 minutes, as required. The discovery was made on July 28, 2010, as a result of an internal review of operating records.

According to LG&E & KU, the discovery was made while investigating the incident reported to SERC on July 19, 2010. SERC staff learned that the generator in question is a small hydro unit that had originally been built without AVR capability. LG&E & KU retrofitted the 13 MW generator with an AVR, which was placed into service on January 12, 2008. SERC determined that LG&E & KU, as a GOP, was in violation of VAR-002-1 R3 because it failed to notify the TOP within 30 minutes after the capability change.

SERC assessed a Violation Severity Level (VSL) of “Lower” in accordance with the August 24, 2009 VSL Matrix because LG&E & KU had one incident of failing to notify the TOP of a capability change.

VAR-002-1.1a R3 (SERC2010-400705):

On August 24, 2010, LG&E & KU self-reported that it failed to notify the TOP within 30 minutes after the reduction in a generator’s reactive power capability, as required.

According to LG&E & KU, the facility consists of four 500+ MW units including the generator at issue, which is a 525 MW coal-fired unit. SERC learned that a hydrogen cooler leak was discovered during a routine operator check on July 30, 2010. While LG&E & KU notified the TOP that the generator’s load would need to be lowered, it failed to inform the TOP that the reactive capability of the generator would also be restricted. While the voltage schedule was maintained, the hydrogen cooler leak caused a reduction of approximately 20% in the generator’s reactive capability. LG&E & KU notified the TOP regarding the reactive power capability change on August 2, 2010. SERC determined that LG&E & KU, as a GOP, was in violation of VAR-002-1.1a R3

because it failed to notify the TOP within 30 minutes after the change in status in the generator's reactive power capability.

SERC assessed a Violation Severity Level (VSL) of "Lower" in accordance with the June 25, 2010 VSL Matrix because LG&E & KU had one incident of failing to notify the TOP of a change in reactive power capability.

RELIABILITY IMPACT STATEMENT- POTENTIAL AND ACTUAL

VAR-002-1.1a R2 (SERC2010-400673):

SERC determined that the violation posed a minimal risk and did not pose a serious and substantial risk to the reliability of the bulk power system because:

1. The voltage deviation was for one hour;
2. The voltage exceeded the TOP's 140 kV specified tolerance by 0.55%; and
3. The generator's size, 178 MW, has a small impact on area voltage since it represents only 5% of the approximately 3500 MW of regulated generation in the immediate area.

VAR-002-1 R1 (SERC2010-400688):

SERC determined that the violation posed a minimal risk and did not pose a serious or substantial risk to the bulk power system because:

1. The AVRs were operating in an automatic mode and were reacting automatically to system conditions;
2. The generators maintained their voltage schedules throughout the time period;
3. The four fossil generators are run for peaking conditions; and
4. The two hydro generators with a total capacity of 26 MW are exempted by the TOP from a voltage schedule.

VAR-002-1 R3 (SERC2010-400689):

SERC determined that the violation posed a minimal risk and did not pose a serious or substantial risk to the reliability of the bulk power system because the total capacity of the hydro generator is 13 MW and it is exempted by the TOP from a voltage schedule. Because of this, the TOP does not expect a particular response from this generator in the case of a transient event that would require the AVR to respond.

VAR-002-1.1a R3 (SERC2010-400705):

SERC determined that the violation posed a minimal risk and did not pose a serious or substantial risk to the reliability of the bulk power system because:

1. The reduction in reactive output was limited to approximately 80% of the total reactive capability of the unit;
2. The voltage schedule was maintained throughout the time period; and
3. LG&E & KU notified the TOP as soon as it confirmed the reduction in reactive capability.

II. DISCOVERY INFORMATION

METHOD OF DISCOVERY

SELF-REPORT	<input checked="" type="checkbox"/>
SELF-CERTIFICATION	<input type="checkbox"/>
COMPLIANCE AUDIT	<input type="checkbox"/>
COMPLIANCE VIOLATION INVESTIGATION	<input type="checkbox"/>
SPOT CHECK	<input type="checkbox"/>
COMPLAINT	<input type="checkbox"/>
PERIODIC DATA SUBMITTAL	<input type="checkbox"/>
EXCEPTION REPORTING	<input type="checkbox"/>

DURATION DATE(S)

VAR-002-1.1a R2 (SERC2010-400673): 5/28/10 for one hour

VAR-002-1 R1 (SERC2010-400688): 8/2/07 (when the Standard became mandatory and enforceable) until 8/17/10 (when all the AVRs were in automatic voltage control mode or a TOP directed state)

VAR-002-1 R3 (SERC2010-400689): 1/12/08 (when the AVR was placed in service) until 7/28/10 (when the TOP was notified)

VAR-002-1.1a R3 (SERC2010-400705): 7/30/10 (when the leak was discovered) until 8/2/10 (when the TOP was notified)

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY

LG&E & KU self-reported the initial violation on July 19, 20010. The subsequent violations were reported to SERC on the following dates (in the order discussed in the Violation Description section above):

1. July 30, 2010
2. July 30, 2010
3. August 24, 2010

IS THE VIOLATION STILL OCCURRING YES ☐ NO ☒
IF YES, EXPLAIN

REMEDIAL ACTION DIRECTIVE ISSUED YES ☐ NO ☒
PRE TO POST JUNE 18, 2007 VIOLATION YES ☐ NO ☒

III. MITIGATION INFORMATION

FOR FINAL ACCEPTED MITIGATION PLAN for the SERC2010-400673 violation:
MITIGATION PLAN NO. SERCMIT004040

DATE SUBMITTED TO REGIONAL ENTITY	9/28/10
DATE ACCEPTED BY REGIONAL ENTITY	6/13/11
DATE APPROVED BY NERC	8/5/11
DATE PROVIDED TO FERC	8/12/11

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE:

MITIGATION PLAN COMPLETED YES ☒ NO ☐

EXPECTED COMPLETION DATE	12/15/10
EXTENSIONS GRANTED	
ACTUAL COMPLETION DATE	12/15/10

DATE OF CERTIFICATION LETTER: 8/8/11
 CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF 12/15/10

VERIFIED COMPLETE BY REGIONAL ENTITY AS OF 8/12/11³

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

LG&E & KU completed the following actions detailed in its Mitigation Plan:

1. Added programming logic at the generator that will audibly re-alarm operators if the voltage output of a unit synchronized to the grid falls outside the TOP voltage schedule;
2. Added bus voltage reading display to the control room display; and
3. Trained the applicable personnel regarding VAR-002 requirements including the importance of adhering to the TOP voltage schedule.

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION PLAN (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)

1. A memo detailing that the programming logic was added to the generator;
2. Visuals of the bus voltage reading display; and
3. Attendance rosters and the materials used for the VAR-002 training sessions.

FOR FINAL ACCEPTED MITIGATION PLAN for the SERC2010-400688 violation:

MITIGATION PLAN NO.	SERCMIT004520
DATE SUBMITTED TO REGIONAL ENTITY	10/15/10
DATE ACCEPTED BY REGIONAL ENTITY	6/13/11
DATE APPROVED BY NERC	10/31/11
DATE PROVIDED TO FERC	11/4/11

³ This Disposition Document serves as SERC's Verification of Mitigation Plan Completion.

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE:

MITIGATION PLAN COMPLETED YES ☒ NO ☐

EXPECTED COMPLETION DATE	1/14/11
EXTENSIONS GRANTED	None
ACTUAL COMPLETION DATE	1/14/11

DATE OF CERTIFICATION LETTER: 8/8/11
 CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF 1/14/11

VERIFIED COMPLETE BY REGIONAL ENTITY AS OF 8/12/11⁴

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

LG&E & KU completed the following actions detailed in its Mitigation Plan:

1. Incorporated the AVR control modes into the CT and hydro unit start-up procedures;
2. Disabled operator access from the Power Factor and VAR modes of operation on the AVR by making the automatic voltage control mode of operation the default control mode; and
3. Trained appropriate plant personnel on the procedures and AVR control modes.

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION PLAN (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)

1. The edited CT and hydro start-up procedures that incorporated the AVR control modes;
2. Logic diagrams showing the modification of control logic prohibiting operator access to the Power Factor and VAR modes of operation on the AVR by making the automatic voltage control mode of operation the default mode; and
3. Attendance rosters and the materials used for the training.

FOR FINAL ACCEPTED MITIGATION PLAN for the SERC2010-400689 violation:

MITIGATION PLAN NO.	SERCMIT004041-1
DATE SUBMITTED TO REGIONAL ENTITY	1/25/11
DATE ACCEPTED BY REGIONAL ENTITY	6/14/11
DATE APPROVED BY NERC	8/5/11
DATE PROVIDED TO FERC	8/12/11

⁴ This Disposition Document serves as SERC's Verification of Mitigation Plan Completion.

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE:

MITIGATION PLAN COMPLETED YES ☒ NO ☐

EXPECTED COMPLETION DATE	Submitted as complete
EXTENSIONS GRANTED	None
ACTUAL COMPLETION DATE	12/15/10

DATE OF CERTIFICATION LETTER: 1/26/11
 CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF 12/15/10

VERIFIED COMPLETE BY REGIONAL ENTITY AS OF 7/28/11⁵

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT RECURRENCE

LG&E & KU completed the following actions detailed in its Mitigation Plan:

1. Revised its procedure to require notification to the TOP before a unit that is retrofitted with an AVR is returned to service and developed a form for submission to the TOP reflecting such; and
2. Trained personnel regarding the need to notify the TOP of the installation of the automatic voltage regulators within 30 minutes of the rehabilitated units going into service.

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE COMPLETION OF MITIGATION PLAN (FOR CASES IN WHICH MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED FOR COMPLETED MILESTONES)

1. The revised procedure and a copy of the TOP notification form; and
2. The attendance rosters and the materials used for the training.

FOR FINAL ACCEPTED MITIGATION PLAN for the SERC2010-400705 violation:

MITIGATION PLAN NO.	SERCMIT004048-1
DATE SUBMITTED TO REGIONAL ENTITY	10/15/10
DATE ACCEPTED BY REGIONAL ENTITY	6/13/11
DATE APPROVED BY NERC	8/5/11
DATE PROVIDED TO FERC	8/12/11

IDENTIFY AND EXPLAIN ALL PRIOR VERSIONS THAT WERE ACCEPTED OR REJECTED, IF APPLICABLE:

MITIGATION PLAN COMPLETED YES ☒ NO ☐

⁵ This Disposition Document serves as SERC's Verification of Mitigation Plan Completion.

EXPECTED COMPLETION DATE	1/31/11
EXTENSIONS GRANTED	None
ACTUAL COMPLETION DATE	1/28/11

DATE OF CERTIFICATION LETTER: 1/28/11
CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF 1/28/11

VERIFIED COMPLETE BY REGIONAL ENTITY AS OF 7/28/11⁶

**ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT
RECURRENCE**

LG&E & KU completed the following actions detailed in its Mitigation Plan:

1. Developed a list of plant equipment which affects reactive capability and posted the list in a visible area in the control room; and
2. Trained Generation Unit Operators regarding reactive capability limiting equipment, the process for notifying the TOP at the beginning and end of reactive capability change events, and the recording of such events.

**LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE
COMPLETION OF MITIGATION PLAN (FOR CASES IN WHICH
MITIGATION IS NOT YET COMPLETED, LIST EVIDENCE REVIEWED
FOR COMPLETED MILESTONES)**

1. The list of the equipment that affects reactive capability and pictures showing the equipment list posted on the walls of the control room and
2. The attendance rosters and the materials used for the training.

EXHIBITS:

SOURCE DOCUMENT

LG&E & KU Self-Report dated July 19, 2010
LG&E & KU Self-Report dated July 30, 2010
LG&E & KU Self-Report dated July 30, 2010
LG&E & KU Self-Report dated August 24, 2010

MITIGATION PLAN

LG&E & KU Mitigation Plan submitted on 9/28/10
LG&E & KU Mitigation Plan submitted on 10/15/10
LG&E & KU Mitigation Plan submitted on 1/25/11
LG&E & KU Mitigation Plan submitted on 10/15/10

CERTIFICATION BY REGISTERED ENTITY

LG&E & KU Certification of Completed Mitigation Plan dated 8/8/11
LG&E & KU Certification of Completed Mitigation Plan dated 8/8/11
LG&E & KU Certification of Completed Mitigation Plan dated 1/26/11

⁶ This Disposition Document serves as SERC's Verification of Mitigation Plan Completion.

LG&E & KU Certification of Completed Mitigation Plan dated 1/28/11

VERIFICATION BY REGIONAL ENTITY

This Disposition document serves as SERC's Verification of Mitigation Plan Completion.

Attachment b

Record documents for the violations of VAR-002-1 and VAR-002-1.1a:

1. LG&E & KU Self-Report for VAR-002-1 R1 dated July 30, 2010;
2. LG&E & KU Self-Report for VAR-002-1 R3 dated July 30, 2010;
3. LG&E & KU Self-Report for VAR-002-1.1a R2 dated July 19, 2010;
4. LG&E & KU Self-Report for VAR-002-1.1a R3 dated August 24, 2010;
5. LG&E & KU Mitigation Plan for VAR-002-1 R1 submitted on October 15, 2010;
6. LG&E & KU Mitigation Plan for VAR-002-1 R3 submitted January 25, 2011;
7. LG&E & KU Mitigation Plan for VAR-002-1.1a R2 submitted September 28, 2010;
8. LG&E & KU Mitigation Plan for VAR-002-1.1a R3 submitted October 15, 2010;
9. LG&E & KU Certification of Mitigation Plan for VAR-002-1 R1 submitted August 8, 2011;
10. LG&E & KU Certification of Mitigation Plan for VAR-002-1 R3 submitted January 26, 2011;
11. LG&E & KU Certification of Mitigation Plan for VAR-002-1.1a R2 submitted August 8, 2011; and
12. LG&E & KU Certification of Mitigation Plan for VAR-002-1.1a R3 submitted January 28, 2011"

Logged in as:
Sharon Solochier

Log Out

Self Report Form - 2010

 Save PDF | Return To Search Results

This form has been locked.

If you need to edit data contained in this form, please contact your SERC Administrator.

This form was submitted on 7/30/2010.

- System Administration
- Committees
- Compliance
- Self Reports
 - Search Self Reports
- Complaints
- TFE Request
- Data Reporting
- Mitigation Plans
- Violation Retractions
- Reliability Assessments
- Plants/Generators Surveys
- Recommendations
- Meetings

* Required Fields

Status: Read Only

Region: SERC

NERC Registry ID: NCR01223

Joint Registration Organization (JRO) ID:

Registered Entity: E.ON U.S. Services Inc. for LG&E & KU Companies

Registered Entity Contact Information:

* Dan Wilson (dan.wilson@eon-us.com) 502-627-3177

Standard Applicable to Self-Report: VAR-002-1.1a

Requirement Applicable to Self-Report: R1.

Sub Requirements Applicable to Self-Report:

Function Applicable to Self-Report: GOP

Has this possible alleged violation previously been reported or discovered: * ☒ Yes ☐ No

Provide NERC Violation ID (If known):

Date violation occurred: * 6/18/2007

Date violation discovered: * 7/2/2010

Is the violation still occurring? * ☒ Yes ☐ No

Detail explanation and cause of violation: *

As a result of investigating a separate possible violation of Paddy's Run 13 (PR13) on May 28, 2010, the following scenario was discovered:

PR13, a simple cycle combustion turbine connected to the Bulk Electric System via a 138 kV bus, is a remote unit that is operated on location by operators dispatched from the Cane Run Generating Station. This unit is a peaking, rather than base load unit. While investigating another possible violation (which is the subject of a separate self-report regarding Standard VAR-002-1.1a R2 dated July 19, 2010), the operating procedures for this unit were reviewed. This review found that operations personnel believed they were operating the unit in automatic voltage control mode, but that the unit was actually operated in the automatic-reactive power mode and had been since June 18, 2007. Further supporting this belief was the fact that the unit has been operated in the automatic reactive power mode since its commissioning based on the standard operating procedure training provided by the Original Equipment Manufacturer (OEM) at that time. Initial reviews have also found no evidence that notice of this mode of operation was provided to the Transmission Operator (TOP).

Following this discovery regarding PR13, E.ON U.S. reviewed the remaining E.ON U.S. units meeting the NERC Statement of Compliance Registry Criteria for GO and GOP registration to identify their mode of operation as specified by VAR-002-1.1a R1 ("automatic voltage regulator in service and controlling voltage"). This effort found all other units that are required to be operating in

the automatic voltage control mode were operating in that mode, with the exception of the E. W. Brown CT's Units 5-7 (BR5-7) and Ohio Falls Hydroelectric Units 6-7 (OF6-7).

Like PR13, BR5-7 are peaking, rather than base load, units and operated in the automatic reactive power mode since June 18, 2007, with the operators mistakenly believing that the units would respond as if they were in the automatic voltage control mode. Further supporting this belief was the fact that the units operated in the automatic reactive power mode since their commissioning based on the standard operating procedure training provided by the OEM at that time. BR5-7 are simple cycle combustion turbines connected to the Bulk Electric System via a 138 kV bus.

OF6 is a small hydroelectric generating unit started locally by operators dispatched from the Cane Run Generating Station and is connected via a 69 kV bus. The operation of the OF6 unit is subject to the conditions of the Ohio River. The newly installed AVR on OF6 was placed in service on January 12, 2008 and OF6 operated in the reactive power mode since commissioning of the AVR. Initial review found no evidence that notice of operation in reactive power mode was given to the TOP since the commissioning of the AVR.

OF7 is a small hydroelectric generating unit started locally by operators dispatched from the Cane Run Generating Station and is connected via a 69 kV bus. The operation of the OF7 unit is subject to the conditions of the Ohio River. The newly installed AVR on OF7 was placed in service prior to June 18, 2007 and OF7 operated in the reactive power mode since commissioning of the AVR. Initial review found no evidence that notice of operation in reactive power mode was given to the TOP since the commissioning of the AVR.

Reliability Impact:

* Minimal 6

Reliability Impact Description:

*

During the hours in which the PR13 and BR5-7 peaking units operated (in the automatic reactive mode), the Bulk Electric System did not experience any adverse conditions and therefore the reliability impact was minimal.

OF6-7 have a very small MVA output and, during the hours in which the OF6-7 units operated with an AVR in the referenced period, the Bulk Electric System did not experience any adverse conditions; therefore the reliability impact was minimal. Additionally, OF6-7 are exempted by the TOP from the voltage schedule, which evidences the limited voltage support role played by OF6-7.

Additional Comments:

The units referenced in this self-report produced less than 1% of the total E.ON U.S. generation (MWh) since June 18, 2007, which significantly minimized the risk of operating the PR13 and BR5-7 peaking units and the OF6-7 hydroelectric units in automatic reactive power control mode.

NOTE: While submittal of a mitigation plan is not required until after a determination of a violation is confirmed, early submittal of a mitigation plan to address and remedy an identified deficiency is encouraged. Submittal of a mitigation plan shall not be deemed an admission of a violation. (See NERC Rules of Procedure, Appendix 4C, Section 6.4.)

 [Submit Self Report](#)

 [Save PDF](#) | [Return To Search Results](#)

Logged in as:
Sharon Solochier

Log Out

- System Administration
- Committees
- Compliance
- Self Reports
 - Search Self Reports
- Complaints
- TFE Request
- Data Reporting
- Mitigation Plans
- Violation Retractions
- Reliability Assessments
- Plants/Generators
- Surveys
- Recommendations
- Meetings

Self Report Form - 2010

 Save PDF | Return To Search Results

This form has been locked.

If you need to edit data contained in this form, please contact your SERC Administrator.

This form was submitted on 7/30/2010.

* Required Fields

Status: Read Only

Region: SERC

NERC Registry ID: NCR01223

Joint Registration Organization (JRO) ID:

Registered Entity:

E.ON U.S. Services Inc. for LG&E & KU Companies

Registered Entity Contact Information:

* Dan Wilson (dan.wilson@eon-us.com) 502-627-3177

Standard Applicable to Self-Report: VAR-002-1.1a

Requirement Applicable to Self-Report: R3.

Sub Requirements Applicable to Self-Report:

Function Applicable to Self-Report: GOP

Has this possible alleged violation previously been reported or discovered:

* ☒ Yes ☐ No

Provide NERC Violation ID (If known):

Date violation occurred:

* 6/18/2007

Date violation discovered:

* 7/2/2010

Is the violation still occurring?

* ☒ Yes ☐ No

Detail explanation and cause of violation:

*

As a result of investigating a separate possible violation of Paddy's Run 13 (PR13) on May 28, 2010, the following scenario was discovered:

Ohio Falls 6 and 7 (OF6-7) are small hydroelectric generating units started locally by operators dispatched from the Cane Run Generating Station and connected via a 69kV bus. The operation of the OF6-7 units is subject to the conditions of the Ohio River. While investigating another possible violation (which is the subject of a separate self-report regarding Standard VAR-002-1.1a R2 dated July 19, 2010), the AVR status for these units was reviewed. This review found that the OF6 unit was retrofitted with an AVR and the TOP was not notified within 30 minutes as defined in R3 of VAR-002-1a. The newly installed AVR on OF6 was placed in service on January 12, 2008 and the TOP was first notified no earlier than May 20, 2009. This review also found that the OF7 unit was retrofitted with an AVR and the TOP was not notified within 30 minutes as defined in R3 of VAR-002-1a. The newly installed AVR on OF7 was placed in service prior to June 18, 2007 and the TOP was first notified no earlier than May 20, 2009.

Reliability Impact:

* Minimal 6


Reliability Impact Description:

*

OF6-7 have a very small MVA output. During the hours in which the OF6-7 units operated with an AVR in the referenced periods, the Bulk Electric System did not experience any adverse conditions. In light of the foregoing, the reliability impact was minimal. Additionally, OF6-7 are exempted by the TOP from the voltage schedule, which evidences the limited voltage support role played by OF6-7.

Additional Comments:

NOTE: While submittal of a mitigation plan is not required until after a determination of a violation is confirmed, early submittal of a mitigation plan to address and remedy an identified deficiency is encouraged. Submittal of a mitigation plan shall not be deemed an admission of a violation. (See NERC Rules of Procedure, Appendix 4C, Section 6.4.)

 Submit Self Report Save PDF | [Return To Search Results](#)

Logged in as:

Jorene Logan

Log Out

System Administration

Committees

Compliance

Self Reports

Add Self Report

Search Self Reports

Complaints

TFE Request

Data Reporting

Mitigation Plans

Violation Retractions

Reliability
Assessments

Plants/Generators

Surveys

Recommendations

Meetings

Self Report Form - 2010

Save PDF | Return To Search Results

This form has been locked.

If you need to edit data contained in this form, please contact your SERC Administrator.

This form was submitted on 7/19/2010.

* Required Fields

Status: Read Only

Region:

SERC

NERC Registry ID:

NCR01223

Joint Registration Organization (JRO) ID:

Registered Entity:

E.ON U.S. Services Inc. for LG&E & KU Companies

Registered Entity Contact Information:

* Jorene Logan (jorene.logan@eon-us.com) 502-627-2923

Standard Applicable to Self-Report:

VAR-002-1.1a

Requirement Applicable to Self-Report:

R2.

Sub Requirements Applicable to Self-Report:

Function Applicable to Self-Report:

GOP

Has this possible alleged violation previously been reported or discovered:

* j Yes j No

Provide NERC Violation ID (If known):

Date violation occurred:

* 5/28/2010

Date violation discovered:

* 6/15/2010

Is the violation still occurring?

* j Yes j No

Detail explanation and cause of violation:

Paddys Run Unit 13 (PR13) is a combustion turbine (CT) connected to the Bulk Electric System (BES) via a 138 kV bus. Operation of this CT is by local control only, and typically is requested to operate only under certain peaking conditions. When requested to operate, an operator is dispatched from the Cane Run Generating Station to be present locally at the PR station. This operator also performs routine operational functions outside of the control room.

The E.ON U.S. Transmission Operator established Paddys Run 138 kV "A" bus voltage schedule at 140 kV +/- 1 kV (i.e. 139-141 kV) on an integrated hour basis. Audible and visual alarms inside the control room area are set to alarm at 138.9 kV and 141.1 kV.

The first request for PR13 to operate in 2010 was on May 26th. The unit operated for approximately 8 hours on May 26th (from 10:47 AM EST to 7:02 PM EST), approximately 7 hours on May 27th (from 10:04 AM EST to 4:51 PM EST) and approximately 7 hours on May 28th (from 11:37 AM EST to 7:01 PM EST). The unit began "ramping down" at 6:45 PM EST and came off-line at 7:01 PM EST. During the hour ending 7:00 PM EST on May 28th, the integrated average voltage was 141.769 kV, 0.769 kV outside the defined voltage schedule.

The event was not reported to the Transmission Operator (TOP) or logged in the GVR log.

Reliability Impact:

*

Minimal

6

Reliability Impact Description:

*

This is the only hour of operation for May 26, 27, and 28 in which the voltage schedule was not met. The PR 138 kV "A" bus voltage was consistently outside the defined voltage schedule in May when PR13 was not operating. Based on a minimal exceedance of the voltage schedule for the integrated hour of the potential violation (0.769 kV) and the fact the PR13 "A" bus voltage was typically outside the defined schedule with PR13 out of service, the risk, if any, to the BES during the one hour excursion was minimal.

Additional Comments:

E.ON U.S. GOP determined on June 15, 2010 that during the operation of PR13 the defined voltage schedule was exceeded for one hour on May 28. Following an internal investigation, the determination was made to file a self-report for a possible violation.

NOTE: While submittal of a mitigation plan is not required until after a determination of a violation is confirmed, early submittal of a mitigation plan to address and remedy an identified deficiency is encouraged. Submittal of a mitigation plan shall not be deemed an admission of a violation. (See NERC Rules of Procedure, Appendix 4C, Section 6.4.)

 [Submit Self Report](#)[Save PDF](#) | [Return To Search Results](#)

Logged in as:
Sharon Solochier

Log Out

Self Report Form - 2010

 Save PDF | Return To Search Results

This form has been locked.

If you need to edit data contained in this form, please contact your SERC Administrator.

This form was submitted on 8/24/2010.

* Required Fields		Status: Read Only
Region:	SERC	
NERC Registry ID:	NCR01223	
Joint Registration Organization (JRO) ID:		
Registered Entity:	E.ON U.S. Services Inc. for LG&E & KU Companies	
Registered Entity Contact Information:		
* Robin Siewert (robin.siewert@eon-us.com) 502-627-2715		
Standard Applicable to Self-Report:	VAR-002-1.1a	
Requirement Applicable to Self-Report:	R3.	
Sub Requirements Applicable to Self-Report:		
Function Applicable to Self-Report:	GOP	
Has this possible alleged violation previously been reported or discovered:	* <input checked="" type="radio"/> Yes <input checked="" type="radio"/> No	
Provide NERC Violation ID (If known):		
Date violation occurred:	* 7/30/2010 ▼	
Date violation discovered:	* 8/2/2010 ▼	
Is the violation still occurring?	* <input checked="" type="radio"/> Yes <input checked="" type="radio"/> No	
Detail explanation and cause of violation:	*	
<p>The Ghent facility consists of four 500+ MW units. Ghent Unit 4 is a coal-fired 525 MW (gross rating) steam unit connected to the bulk electric system (BES) via a 345kV bus. On the morning of July 30, 2010 (EST), during a routine operator check, 8 ounces of liquid was drained from the generator casing, which was reported to the Shift Supervisor. At 6:55 AM an alarm was received indicating a high level in one of the Generator liquid detectors, the shift supervisor was notified, and additional liquid was drained from the generator casing. The operations department began a regiment of frequent checks to determine if there was a problem with the generator cooling system.</p> <p>At 3:00 PM it was determined that there was a hydrogen cooler leak. Ghent 4 unit operations notified Generation Dispatch that unit load would need to be lowered, per manufactures instructions regarding operating with a cooler out of service, to remove hydrogen coolers from service to determine which cooler was leaking, and the load was decreased. Testing showed that one of the four coolers had a slight leak (#2 cooler) and the #3 cooler had a significant leak. The #3 cooler was removed from service, and the drain check frequency was increased.</p> <p>On Monday August 2, 2010, it was determined that the reactive capability may have been reduced, and the Transmission Operator was notified at 8:15 AM. The engineering department confirmed that the reactive capability had been reduced in varying degrees ranging between 10 and 20% during a two day period, depending upon the unit loading.</p>		

During the entire time period, the voltage was maintained within the band prescribed by the voltage schedule. The unit was removed from service on August 3, 2010, for an outage during which time the cooler was repaired, after which the Transmission Operator was notified. The unit was returned to service at full capacity on August 4, 2010 at 2:47 PM EST.

Reliability Impact:

* Minimal 6

Reliability Impact Description:

*

Between the hours that the load was reduced and the Transmission Operator was notified, the Bulk Electric System did not experience any adverse affects and therefore we believe the impact to be minimal.

Additional Comments:

During the event the reduction in reactive capability of the facility as a whole was negligible.

NOTE: While submittal of a mitigation plan is not required until after a determination of a violation is confirmed, early submittal of a mitigation plan to address and remedy an identified deficiency is encouraged. Submittal of a mitigation plan shall not be deemed an admission of a violation. (See NERC Rules of Procedure, Appendix 4C, Section 6.4.)

 [Submit Self Report](#)

 [Save PDF](#) | [Return To Search Results](#)

Logged in as:

John Voyles

Log Out


Edit - Mitigation Plan

 Save Item |  Delete Item | Cancel Changes |  Save PDF | Return To Search Results

 Original Mitigation Plan


* Required Fields

Status: Saved

 All Milestones have been Completed

Section A: Compliance Notices & Mitigation Plan Requirements

A.1 Notices and requirements applicable to Mitigation Plans and this Submittal Form are set forth in "Attachment A - Compliance Notices & Mitigation Plan Requirements" to this form.

A.2  I have reviewed [Attachment A](#) and understand that this Mitigation Plan Submittal Form will not be accepted unless this box is checked.

Section B: Registered Entity Information


B.1 Identify your organization

Company Name: E.ON U.S. Services Inc. for LG&E & KU Companies

Company Address: P.O. Box 32020
Louisville, Kentucky
40232

NERC Compliance Registry ID: NCR01223

B.2 Identify the individual in your organization who will be the Entity Contact regarding this Mitigation Plan.

Name: *  Find | Clear


Section C: Identification of Alleged or Confirmed Violation(s) Associated with this Mitigation Plan

C.1 This Mitigation Plan is associated with the following Alleged or Confirmed violation(s) of the reliability standard listed below. 

Applicable Standard, Requirement(s) and Violation Date:

Standard: 

 VAR-002-1 R1. (07/30/2010)

C.2 Identify the cause of the Alleged or Confirmed violation(s) identified above. Additional detailed information may be provided as an attachment: 

As a result of investigating the alleged violation of Paddy's Run 13 (PR13) on May 28, 2010, the following scenario was discovered:

PR13, a simple cycle combustion turbine connected to the Bulk Electric System via a 138 kV bus, is a remote unit that is operated on location by operators dispatched from the Cane Run Generating Station. This unit is a peaking, rather than base load unit. While investigating another possible violation (which is the subject of a separate self-report regarding Standard VAR-002-1.1a R2 dated July 19, 2010 - SERC2010 - 400673), the operating procedures for this unit were reviewed. This review found that operations personnel believed they were operating the unit in automatic voltage control mode, but that the unit was actually operated in the automatic-reactive power mode and had been since June 18, 2007. The unit had been operated in the automatic reactive power mode since its commissioning based on the standard operating procedure training provided by the Original Equipment Manufacturer (OEM) at that time. Initial reviews have also found no evidence that notice of this mode of operation was provided to the Transmission Operator (TOP).

Following this discovery regarding PR13, E.ON U.S. reviewed the remaining E.ON U.S. units meeting the NERC Statement of Compliance Registry Criteria for GO and GOP registration to identify their mode of operation as specified by VAR-002-1.1a R1 ("automatic voltage regulator in service and controlling voltage"). This effort found all other units that are required to be

operating in the automatic voltage control mode were operating in that mode, with the exception of the E. W. Brown CT's Units 5-7 (BR5-7) and Ohio Falls Hydroelectric Units 6-7 (OF6-7).

Like PR13, BR5-7 are peaking, rather than base load, units and operated in the automatic reactive power mode since June 18, 2007, with the operators mistakenly believing that the units would respond as if they were in the automatic voltage control mode. This mistaken belief can be attributed to the standard operating procedure training provided by the OEM at Commissioning. BR5-7 are simple cycle combustion turbines connected to the Bulk Electric System via a 138 kV bus.

OF6 is a small hydroelectric generating unit started locally by operators dispatched from the Cane Run Generating Station and is connected via a 69 kV bus. The operation of the OF6 unit is subject to the conditions of the Ohio River. The newly installed AVR on OF6 was placed in service on January 12, 2008 and OF6 operated in the reactive power mode since commissioning of the AVR. Initial review found no evidence that notice of operation in reactive power mode was given to the TOP since the commissioning of the AVR.

OF7 is a small hydroelectric generating unit started locally by operators dispatched from the Cane Run Generating Station and is connected via a 69 kV bus. The operation of the OF7 unit is subject to the conditions of the Ohio River. The newly installed AVR on OF7 was placed in service prior to June 18, 2007 and OF7 operated in the reactive power mode since commissioning of the AVR. Initial review found no evidence that notice of operation in reactive power mode was given to the TOP since the commissioning of the AVR.

C.3 Provide any additional relevant information regarding the Alleged or Confirmed violations associated with this Mitigation Plan.

Additional detailed information may be provided as an attachment:

Section D: Details of Proposed Mitigation Plan

D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the Alleged or Confirmed violations identified above in Part C.1 of this form.

Additional detailed information may be provided as an attachment:

At the relevant Paddy's Run, E.W. Brown, and Ohio Falls units, the following actions will be completed for this mitigation plan:

- (1) Control system modifications: Disable Operator access from the Power Factor (PF) or VAR modes of operation on the AVR by making the automatic voltage control mode of operation the default control mode.
- (2) Edit procedure: Revise the CT and hydro unit start-up procedures relating specifically to the startup and shutdown of the CT and hydro unit including the operation, and control modes of the automatic voltage regulator (AVR).
- (3) Train personnel: Train appropriate plant personnel on the procedures from step 2 above.
- (4) Close mitigation plan: Close mitigation plan and submit a certificate of closure to SERC, including the required supporting evidence.

D.2 Provide the date by which full implementation of the Mitigation Plan will be, or has been, completed with respect to the Alleged or Confirmed violations identified above. State whether the Mitigation Plan has been fully implemented:

1/14/2011

D.3 Enter Milestone Activities, with due dates, that your organization is proposing, or has completed, for this Mitigation Plan:

Milestone	Status	Due Date	Completed Date
Edit Procedures	Milestone Pending	11/15/2010	Detail
Control System Modifications	Milestone Pending	11/30/2010	Detail
Train Personnel	Milestone Pending	12/30/2010	Detail
Close Mitigation Plan	Milestone Pending	1/14/2011	Detail
Add New Mitigation Plan Milestone			

Section E: Interim and Future Reliability Risk

Abatement of Interim BPS Reliability Risk

E.1 While your organization is implementing this Mitigation Plan the reliability of the Bulk Power System (BPS) may remain at higher risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take to mitigate this increased risk to the reliability of the BPS.

Additional detailed information may be provided as an attachment:

The units referenced herein produced less than 1% of the total E.ON U.S. generation (MWh) since June 18, 2007, which significantly minimized the risk of operating the PR13 and BR5-7 peaking units and the OF6-7 hydroelectric units in automatic reactive power control mode.

There is no risk to the Bulk Power System, as all these units are now operating in the automatic voltage control mode and appropriate awareness exists among unit operations to prevent changes to that mode of operation.

Prevention of Future BPS Reliability Risk

E.2 Describe how successful completion of this Mitigation Plan will prevent or minimize the probability that your organization incurs further risk of Alleged violations of the same or similar reliability standards requirements in the future.

Additional detailed information may be provided as an attachment:

1. The controls have been modified so that operators can operate the AVR in automatic voltage control mode or in manual mode, under the direction of the TOP.
2. An edited procedure and targeted training will help ensure operations are consistent with this requirement.

Section F: Authorization

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

- a) Submits this Mitigation Plan for acceptance by **SERC** and approval by NERC, and
- b) If applicable, certifies that this Mitigation Plan was completed on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- c) Acknowledges:
 1. I am **John Voyles** of **E.ON U.S. Services Inc. for LG&E & KU Companies**
 2. I am qualified to sign this Mitigation Plan on behalf of **E.ON U.S. Services Inc. for LG&E & KU Companies**
 3. I understand **E.ON U.S. Services Inc. for LG&E & KU Companies's** obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))
 4. I have read and am familiar with the contents of this Mitigation Plan
 5. **E.ON U.S. Services Inc. for LG&E & KU Companies** agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by **SERC** and approved by NERC

Authorized Individual Signature [Sign](#)

Section G: Regional Entity Contact

Please direct any questions regarding completion of this form to:

John Wolfmeyer
Compliance Engineer
SERC Reliability Corporation
704-940-8216
jwolfmeyer@serc1.org

Logged in as:

John Voyles

Log Out

Edit - Mitigation Plan

Save Item Delete Item Cancel Changes Save PDF Return To Search Results Prev Mit Plan Rev 1

Original Mitigation Plan

* Required Fields

Status: Saved

All Milestones have been Completed

Section A: Compliance Notices & Mitigation Plan Requirements

A.1 Notices and requirements applicable to Mitigation Plans and this Submittal Form are set forth in "Attachment A - Compliance Notices & Mitigation Plan Requirements" to this form.

A.2 I have reviewed Attachment A and understand that this Mitigation Plan Submittal Form will not be accepted unless this box is checked.

Section B: Registered Entity Information

B.1 Identify your organization

Company Name: LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

Company Address: P.O. Box 32020
Louisville, Kentucky
40232

NERC Compliance Registry ID: NCR01223

B.2 Identify the individual in your organization who will be the Entity Contact regarding this Mitigation Plan.

Name: * Dan Wilson Find Clear

E-Mail: dan.wilson@lge-ku.com

Section C: Identification of Alleged or Confirmed Violation(s) Associated with this Mitigation Plan

C.1 This Mitigation Plan is associated with the following Alleged or Confirmed violation(s) of the reliability standard listed below.

Applicable Standard, Requirement(s) and Date Reported to Region:

Standard: VAR-002-1 6

VAR-002-1 R3. (07/30/2010)

C.2 Identify the cause of the Alleged or Confirmed violation(s) identified above.

Additional detailed information may be provided as an attachment:

Ohio Falls 6 and 7 (OF6-7) are small hydroelectric generating units started locally by operators dispatched from the Cane Run Generating Station and connected via a 69kV bus. The operation of the OF6-7 units is subject to the conditions of the Ohio River. While investigating another possible violation (self-report SERC 2010-400673), the AVR status for these units was reviewed. This review found that the OF6 unit was

* retrofitted with an AVR and the TOP was not notified within 30 minutes as defined in R3 of VAR-002-1a. The newly installed AVR on OF6 was placed in service on January 12, 2008 and the TOP was first notified no earlier than May 20, 2009. This review also found that the OF7 unit was retrofitted with an AVR and the TOP was not notified within 30 minutes as defined in R3 of VAR-002-1a. The newly installed AVR on OF7 was placed in service prior to June 18, 2007 and the TOP was first notified no earlier than May 20, 2009.

C.3 Provide any additional relevant information regarding the Alleged or Confirmed violations associated with this Mitigation Plan.

Additional detailed information may be provided as an attachment:

* No additional information.

Section D: Details of Proposed Mitigation Plan

D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the Alleged or Confirmed violations identified above in Part C.1 of this form.

Additional detailed information may be provided as an attachment:

1) Develop Form: To ensure timely notifications are made, the E.ON U.S. Procedure titled "Generator Operation for Maintaining Network Voltage Schedules" shall be revised to include the following:

For installation of AVRs on units where none existed the Transmission Operator shall be notified prior to the unit being returned to service. The Transmission Operator shall be requested to provide an updated voltage


schedule or direct the GO to maintain the existing schedule. Notification of AVR installation shall be in writing from the responsible General Manager to the Manager of Transmission Operations and copied to the Manager of Compliance and Document Management.

- * The current AVR installation schedule for the remaining six units at Ohio Falls will be provided to the Transmission Operator.

2) Training Personnel to contact the Transmission Operator (i.e. the Simpsonville Dispatcher): Appropriate Ohio Falls personnel will be trained to notify the Transmission Operator (i.e. contact the Simpsonville Dispatcher) of the installation of the automatic voltage regulators within thirty (30) minutes of the rehabilitated units going into service (R3).

3) Submission of Evidence: Close Mitigation Plan and submit certificate of closure to SERC, including required supporting evidence.

D.2 Provide the date by which full implementation of the Mitigation Plan will be, or has been, completed with respect to the Alleged or Confirmed violations identified above. State whether the Mitigation Plan has been fully implemented:

* 12/15/2010 

D.3 Enter Milestone Activities, with due dates, that your organization is proposing, or has completed, for this Mitigation Plan:

Milestone	Status	Due Date	Completed Date	
Develop Form	Milestone Completed	11/15/2010	11/15/2010	Detail
Training of Personnel	Milestone Pending	11/30/2010	11/30/2010	Detail
Submission of Evidence	Milestone Pending	12/15/2010	12/15/2010	Detail

[Add New Mitigation Plan Milestone](#)

Section E: Interim and Future Reliability Risk

Abatement of Interim BPS Reliability Risk

E.1 While your organization is implementing this Mitigation Plan the reliability of the Bulk Power System (BPS) may remain at higher risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take to mitigate this increased risk to the reliability of the BPS. Additional detailed information may be provided as an attachment:

* There is no risk to the Bulk Power System as the Transmission Operator has been notified of the installation of the AVRs on OF6-7. Also, any new AVRs to be installed at Ohio Falls (and this requiring notice to the TOP) are scheduled for installation well after the completion of this Mitigation Plan is scheduled; thus no real risk exists of a failure to properly notify while this Mitigation Plan is being completed. Additionally, OF6-7 are exempted by the TOP from the voltage schedule, which evidences the limited voltage support role played by OF6-7.

Prevention of Future BPS Reliability Risk

E.2 Describe how successful completion of this Mitigation Plan will prevent or minimize the probability that your organization incurs further risk of Alleged violations of the same or similar reliability standards requirements in the future. Additional detailed information may be provided as an attachment:

* Once this Mitigation Plan is completed, the likelihood of a future violation is very low. First, the Procedure Revision ensures appropriate notification to the Transmission Operator of the AVR installation and provides for consideration of changes to the voltage schedule if prudent. Second, the training provided to unit operators will act as a second layer of protection to minimize the risk that notice of the AVR going into service will not be provided in a timely manner. Lastly, notification of the current installation schedule provides the TOP opportunity to consider any impact to future planning.

OF6-7 are exempted by the TOP from the voltage schedule, which evidences the limited voltage support role played by OF6-7.

Section F: Authorization

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

- Submits this Mitigation Plan for acceptance by **SERC** and approval by NERC, and
- If applicable, certifies that this Mitigation Plan was completed on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- Acknowledges:
 - I am **John Voyles** of **LG&E and KU Services Company** as agent for **Louisville Gas and Electric Company and Kentucky Utilities Company**
 - I am qualified to sign this Mitigation Plan on behalf of **LG&E and KU Services Company** as agent for **Louisville**

Gas and Electric Company and Kentucky Utilities Company

3. I understand **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company's** obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))
4. I have read and am familiar with the contents of this Mitigation Plan
5. **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company** agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by **SERC** and approved by NERC

Authorized Signatory John Voyles notified on 1/24/2011

Authorized Individual Signature [Sign](#)

Section G: Regional Entity Contact

Please direct any questions regarding completion of this form to:

John Wolfmeyer
SERC Compliance Engineer
SERC Reliability Corporation
704-940-8216
jwolfmeyer@serc1.org

 [Save Item](#) |  [Delete Item](#) | [Cancel Changes](#) |  [Save PDF](#) | [Return To Search Results](#) | [Prev Mit Plan Rev 1](#)

Logged in as:

John Voyles


Log Out

Edit - Mitigation Plan

 Save Item |  Delete Item | Cancel Changes |  Save PDF | Return To Search Results


* Required Fields

Status: Saved

 All Milestones have been Completed

Section A: Compliance Notices & Mitigation Plan Requirements

A.1 Notices and requirements applicable to Mitigation Plans and this Submittal Form are set forth in "Attachment A - Compliance Notices & Mitigation Plan Requirements" to this form.

A.2  I have reviewed [Attachment A](#) and understand that this Mitigation Plan Submittal Form will not be accepted unless this box is checked.

Section B: Registered Entity Information

B.1 Identify your organization

Company Name: E.ON U.S. Services Inc. for LG&E & KU Companies

Company Address: P.O. Box 32020
Louisville, Kentucky
40232

NERC Compliance Registry ID: NCR01223

B.2 Identify the individual in your organization who will be the Entity Contact regarding this Mitigation Plan.

Name: *


 Find | Clear


Section C: Identification of Alleged or Confirmed Violation(s) Associated with this Mitigation Plan

C.1 This Mitigation Plan is associated with the following Alleged or Confirmed violation(s) of the reliability standard listed below. 

Applicable Standard, Requirement(s) and Violation Date:

Standard:


 VAR-002-1.1a R2. (07/19/2010)

C.2 Identify the cause of the Alleged or Confirmed violation(s) identified above. Additional detailed information may be provided as an attachment: 

Paddy's Run Unit 13 (PR13) is a combustion turbine (CT) connected to the Bulk Electric System (BES) via a 138 kV bus. Operation of this CT is by local control only, and typically is requested to operate under certain peaking conditions. When requested to operate, an operator is dispatched from the Cane Run Generating Station to be present locally at the PR station. This operator also performs routine operational functions outside of the control room.

The E.ON U.S. Transmission Operator established Paddys Run 138 kV "A" bus voltage schedule at 140 kV +/- 1 kV (i.e. 139-141 kV) on an integrated hour basis. Audible and visual alarms inside the control room area are set to alarm at 138.9 kV and 141.1 kV.

The first request for PR13 to operate in 2010 was on May 26th. The unit operated for approximately 8 hours on May 26th (from 10:47 AM EST to 7:02 PM EST), approximately 7 hours on May 27th (from 10:04 AM EST to 4:51 PM EST) and approximately 7 hours on May 28th (from 11:37 AM EST to 7:01 PM EST). The unit began "ramping down" at 6:45 PM EST and came off-line at 7:01 PM EST. During the hour ending 7:00 PM EST, the integrated average voltage was 141.769 kV, 0.769 kV outside the defined voltage schedule. The event was not reported to the Transmission Operator (TOP) or logged in the GVR log.

C.3 Provide any additional relevant information regarding the Alleged or Confirmed violations associated with this Mitigation Plan. Additional detailed information may be provided as an attachment: 

Section D: Details of Proposed Mitigation Plan

D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the Alleged or Confirmed violations identified above in Part C.1 of this form. Additional detailed information may be provided as an attachment:

The following actions will be (or have been) taken as a result of the May 28th Paddy's Run (PR) VAR-002-1 R2 incident:

(1) Addition of Programming Logic to PR Controls: Programming logic will be added to the PR controls which is conditional and queries the system to determine if any generation at Paddy's Run is synchronized to the grid. If not, no alarming takes place. In the event a unit is subsequently synchronized to the grid and is outside the TOP-defined voltage schedule, the responsible Operator receives an audible alarm. [Completed 07-09-10]

(2) Addition of PR Bus Voltage to CR DCS: The PR 140 kV A bus voltage reading will be added to the DCS screens in the Cane Run control room so it is in view of a second operator in addition to the Paddy's Run on-site Operator. [Completed 08-20-10]

(3) Training of Affected Personnel: At the direction of the Production Supervisor, each CR/PR Production Leader and each CR/PR Operator will receive a job briefing, which includes an explanation of VAR-002-1 and emphasizes the importance of adhering to the TOP-defined voltage schedule and notifying the TOP when the plant is unable to meet the Voltage Schedule.

(4) Close mitigation plan: Close mitigation plan and submit a certificate of closure to SERC, including the required supporting evidence.

D.2 Provide the date by which full implementation of the Mitigation Plan will be, or has been, completed with respect to the Alleged or Confirmed violations identified above. State whether the Mitigation Plan has been fully implemented:

12/15/2010

D.3 Enter Milestone Activities, with due dates, that your organization is proposing, or has completed, for this Mitigation Plan:

Milestone	Status	Due Date	Completed Date	
(1) Addition of Programming Logic to PR Controls	Milestone Completed	7/9/2010	7/9/2010	Detail
(2) Addition of PR Bus Voltage to CR DCS	Milestone Completed	8/20/2010	8/20/2010	Detail
(3) Training of Affected Personnel	Milestone Pending	10/15/2010		Detail
(4) Close Mitigation Plan	Milestone Pending	12/15/2010		Detail

[Add New Mitigation Plan Milestone](#)

Section E: Interim and Future Reliability Risk

Abatement of Interim BPS Reliability Risk

E.1 While your organization is implementing this Mitigation Plan the reliability of the Bulk Power System (BPS) may remain at higher risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take to mitigate this increased risk to the reliability of the BPS. Additional detailed information may be provided as an attachment:

The Bulk Power System is not at higher risk or otherwise negatively impacted during implementation of this mitigation plan because

- Milestone activities 1 and 2 are complete.
- Voltage support from PR13 is minimal as evidenced by the bus voltage being outside of the voltage schedule tolerance band when the unit is out of service.

Prevention of Future BPS Reliability Risk

E.2 Describe how successful completion of this Mitigation Plan will prevent or minimize the probability that your organization incurs further risk of Alleged violations of the same or similar reliability standards requirements in the future. Additional detailed information may be provided as an attachment:

By providing the training, improving the alarms, and adding the 140 kV A bus voltage reading to the DCS screens that the operators monitor, the risk of incurring similar incidents is lessened.

Section F: Authorization

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

- a) Submits this Mitigation Plan for acceptance by **SERC** and approval by NERC, and
- b) If applicable, certifies that this Mitigation Plan was completed on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- c) Acknowledges:
 - 1. I am **John Voyles** of **E.ON U.S. Services Inc. for LG&E & KU Companies**
 - 2. I am qualified to sign this Mitigation Plan on behalf of **E.ON U.S. Services Inc. for LG&E & KU Companies**
 - 3. I understand **E.ON U.S. Services Inc. for LG&E & KU Companies's** obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))
 - 4. I have read and am familiar with the contents of this Mitigation Plan
 - 5. **E.ON U.S. Services Inc. for LG&E & KU Companies** agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by **SERC** and approved by NERC

Authorized Individual Signature [Sign](#)

Section G: Regional Entity Contact

Please direct any questions regarding completion of this form to:

John Wolfmeyer
Compliance Engineer
SERC Reliability Corporation
704-940-8216
jwolfmeyer@serc1.org

 Save Item |  Delete Item | Cancel Changes |  Save PDF | [Return To Search Results](#)

Logged in as:

John Voyles

Log Out

Edit - Mitigation Plan

Save Item Delete Item Cancel Changes Save PDF Return To Search Results

Original Mitigation Plan

* Required Fields

Status: Saved

All Milestones have been Completed

Section A: Compliance Notices & Mitigation Plan Requirements

A.1 Notices and requirements applicable to Mitigation Plans and this Submittal Form are set forth in "Attachment A - Compliance Notices & Mitigation Plan Requirements" to this form.

A.2 I have reviewed Attachment A and understand that this Mitigation Plan Submittal Form will not be accepted unless this box is checked.

Section B: Registered Entity Information

B.1 Identify your organization

Company Name: E.ON U.S. Services Inc. for LG&E & KU Companies
Company Address: P.O. Box 32020
Louisville, Kentucky 40232
NERC Compliance Registry ID: NCR01223

B.2 Identify the individual in your organization who will be the Entity Contact regarding this Mitigation Plan.

Name: * Dan Wilson Find Clear

Section C: Identification of Alleged or Confirmed Violation(s) Associated with this Mitigation Plan

C.1 This Mitigation Plan is associated with the following Alleged or Confirmed violation(s) of the reliability standard listed below.

Applicable Standard, Requirement(s) and Violation Date:

Standard: VAR-002-1.1a 6

VAR-002-1.1a R3. (08/24/2010)

C.2 Identify the cause of the Alleged or Confirmed violation(s) identified above. Additional detailed information may be provided as an attachment:

The Ghent facility consists of four 500+ MW units. Ghent Unit 4 is a coal-fired 525 MW (gross rating) steam unit connected to the bulk electric system (BES) via a 345kV bus. On the morning of July 30, 2010 (EST), during a routine operator check, 8 ounces of liquid was drained from the generator casing, which was reported to the Shift Supervisor. At 6:55 AM an alarm was received indicating a high level in one of the Generator liquid detectors, the shift supervisor was notified, and additional liquid was drained from the generator casing. The operations department began a regiment of frequent checks to determine if there was a problem with the generator cooling system.

At 3:00 PM it was determined that there was a hydrogen cooler leak. Ghent 4 unit operations notified Generation Dispatch that unit load would need to be lowered, per manufactures instructions regarding operating with a cooler out of service, to remove hydrogen coolers from service to determine which cooler was leaking, and the load was decreased. Testing showed that one of the four coolers had a slight leak (#2 cooler) and the #3 cooler had a significant leak. The #3 cooler was removed from service, and the drain check frequency was increased. On Monday August 2, 2010, it was determined that the reactive capability may have been reduced, and the Transmission Operator was notified at 8:15 AM. The engineering department confirmed that the reactive capability had been reduced in varying degrees ranging between 10 and 20% during a two day period, depending upon the unit loading.

During the entire time period, the voltage was maintained within the band prescribed by the voltage schedule. The unit was removed from service on August 3, 2010, for an outage during which time the cooler was repaired, after which the Transmission Operator was notified. The unit was returned to service at full capacity on August 4, 2010 at 2:47 PM EST.

- C.3 Provide any additional relevant information regarding the Alleged or Confirmed violations associated with this Mitigation Plan.**
Additional detailed information may be provided as an attachment:

Section D: Details of Proposed Mitigation Plan

- D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the Alleged or Confirmed violations identified above in Part C.1 of this form.**
Additional detailed information may be provided as an attachment:

(1) Identify list: Through discussions of engineering and operations personnel, develop a list of plant equipment which affects reactive capability.

(2) Post list: Post a list of equipment identified in (1) above in visible area in the control room.

(3) Train unit operators: Train unit operators regarding reactive capability limiting equipment, the process for notifying the Transmission Operator at the beginning and end of reactive capability change events, and the recording of such events.

(4) Submit evidence: Close mitigation plan and submit a certificate of closure to SERC, including the required supporting evidence.

- D.2 Provide the date by which full implementation of the Mitigation Plan will be, or has been, completed with respect to the Alleged or Confirmed violations identified above. State whether the Mitigation Plan has been fully implemented:**

1/31/2011

- D.3 Enter Milestone Activities, with due dates, that your organization is proposing, or has completed, for this Mitigation Plan:**

Milestone	Status	Due Date	Completed Date
Identify List	Milestone Pending	11/1/2010	Detail
Post List	Milestone Pending	11/15/2010	Detail
Train Unit Operators	Milestone Pending	12/30/2010	Detail
Submit Evidence	Milestone Pending	1/31/2011	Detail
Add New Mitigation Plan Milestone			

Section E: Interim and Future Reliability Risk

Abatement of Interim BPS Reliability Risk

- E.1 While your organization is implementing this Mitigation Plan the reliability of the Bulk Power System (BPS) may remain at higher risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take to mitigate this increased risk to the reliability of the BPS.**
Additional detailed information may be provided as an attachment:

During implementation of the mitigation plan, the complete listing of equipment which may change reactive capacity has not been fully developed. An interim list has been developed and posted. Actions required if there are problems with listed equipment have been reviewed and discussed with operations personnel. Operator meetings and discussion have heightened operator awareness concerning this issue.

Prevention of Future BPS Reliability Risk

- E.2 Describe how successful completion of this Mitigation Plan will prevent or minimize the probability that your organization incurs further risk of Alleged violations of the same or similar reliability standards requirements in the future.**
Additional detailed information may be provided as an attachment:

Posting a list of equipment which affects the reactive capability of the unit will provide operators with a researched and ready reference to assist in determining when to call the Transmission Operator to report reactive capability change events. Additionally, training will enhance understanding of operating staff concerning events which change the reactive capability of units.

Section F: Authorization

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

- a) Submits this Mitigation Plan for acceptance by **SERC** and approval by NERC, and
- b) If applicable, certifies that this Mitigation Plan was completed on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- c) Acknowledges:
 - 1. I am **John Voyles** of **E.ON U.S. Services Inc. for LG&E & KU Companies**
 - 2. I am qualified to sign this Mitigation Plan on behalf of **E.ON U.S. Services Inc. for LG&E & KU Companies**
 - 3. I understand **E.ON U.S. Services Inc. for LG&E & KU Companies's** obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))
 - 4. I have read and am familiar with the contents of this Mitigation Plan
 - 5. **E.ON U.S. Services Inc. for LG&E & KU Companies** agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by **SERC** and approved by NERC

Authorized Individual Signature [Sign](#)

Section G: Regional Entity Contact

Please direct any questions regarding completion of this form to:

John Wolfmeyer
Compliance Engineer
SERC Reliability Corporation
704-940-8216
jwolfmeyer@serc1.org

 Save Item |  Delete Item | Cancel Changes |  Save PDF | [Return To Search Results](#)

Logged in as:

John Voyles

Log Out

Edit

Save PDF | Return to Mitigation Plan

* Required Fields

Status: Saved

All Mitigation Plan Completion Certification submittals shall include data or information sufficient for SERC to verify completion of the Mitigation Plan. SERC may request such additional data or information and conduct follow-up assessments, on-site or other Spot Checking, or Compliance Audits as it deems necessary to verify that all required actions in the Mitigation Plan have been completed and the Registered Entity is in compliance with the subject Reliability Standard. (CMEP Section 6.6) Data or information submitted may become part of a public record upon final disposition of the possible violation, therefore any confidential information contained therein should be marked as such in accordance with the provisions of Section 1500 of the NERC Rules of Procedure.

Name of Registered Entity submitting certification: **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**

Date of Certification: 08/08/2011

Name of Standard of mitigation violation(s): VAR-002-1

Mitigated information:

Requirement	Tracking Number	Violation ID
R1.	SERC2010-400688	SERC201000584

Date of completion of the Mitigation Plan:

1/14/2011

Summary of all actions described in Part D of the releveant mitigation plan:

The following actions have been taken as a result of the VAR-002-1 R1 incident discovered on 7/2/2010 for the Paddy's Run CT Unit 13, E.W. Brown CT Units 5-7, and Ohio Falls Hydro Units 6-7:

- 1) Procedures were edited: the CT and hydro start-up procedures which relate specifically to the startup and shutdown of the CT and hydro units (including operation and control modes of the automatic voltage regulator). [Completed 11/15/2010]
- 2) Control systems were modified: operator access from the Power Factor (PF) or VAR modes of operation on the automatic voltage regulator were disabled and the automatic voltage control mode of operation was made the default control mode. [Completed 11/30/2010]
- 3) Affected personnel have been trained: the operators were trained and sign-in sheets were retained, as well as training materials. [Completed 12/22/2010]
- 4) Close mitigation plan: With the submission of this certificate and supporting evidence to SERC, the mitigation plan is being closed as of the filing date to SERC. [Completed 01/14/2011]

Description of the information provided to SERC for their evaluation:

The following is submitted as evidence for completion of the first three of the four tasks above. The fourth task is completed as of this filing. Hence the evidence is only shown for the first three.

- (1) A document is submitting regarding the procedures that were edited for the Paddy's Run CT Unit 13, E.W. Brown CT Units 5-7, and Ohio Falls Hydro Units 6-7 entitled, Action Item 1_Modify Procedures.pdf
- (2) A document is submitted showing the modifications which were made to the controls for the Paddy's Run CT Unit 13, E.W. Brown CT Units 5-7, and Ohio Falls Hydro Units 6-7 entitled, Action Item 2_Control Modifications.pdf
- (3) The document containing personnel training materials, as well as the training sheets, being submitted for Action Item 3 Evidence is entitled, Action Item 3_Training.pdf

Authorized Signatory John Voyles notified on 8/4/2011
Signed By John Voyles on 8/8/2011

Logged in as:

John Voyles

Log Out

Edit

 Save Item |  Delete Item | Cancel Changes |  Save PDF | Return to Mitigation Plan

* Required Fields

Status: Saved

- System Administration
- Committees
- Compliance
- Self Reports
- Complaints
- TFE Request
- Data Reporting
- Mitigation Plans
- Violation Retractions
- Reliability Assessments
- Surveys
- Recommendations
- Meetings

All Mitigation Plan Completion Certification submittals shall include data or information sufficient for SERC to verify completion of the Mitigation Plan. SERC may request such additional data or information and conduct follow-up assessments, on-site or other Spot Checking, or Compliance Audits as it deems necessary to verify that all required actions in the Mitigation Plan have been completed and the Registered Entity is in compliance with the subject Reliability Standard. (CMEP Section 6.6) Data or information submitted may become part of a public record upon final disposition of the possible violation, therefore any confidential information contained therein should be marked as such in accordance with the provisions of Section 1500 of the NERC Rules of Procedure.

Name of Registered Entity submitting certification: **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**

Name of Standard of mitigation violation(s): VAR-002-1

Mitigated information:

Requirement	Tracking Number	Violation ID
R3.	SERC2010-400689	ID Not Assigned

Date of completion of the Mitigation Plan:

12/15/2010

Summary of all actions described in Part D of the releveant mitigation plan:

The following actions have been taken as a result of the Ohio Falls Units 6/7 VAR-002-1.1a R3 incident:

- (1) A form has been developed to ensure that timely notifications are made, and included as part of updating the procedure "Generator Operation for Maintaining Network Voltage Schedules". Additionally, the current AVR installation schedule for the remaining 6 units to be rehabilitated at Ohio Falls has been sent to the Transmission Operator (TOP).[Completed 11-15-2010]
- (2) Personnel have been trained to notify the TOP of the installation of the automatic voltage regulators within thirty (30) minutes of the units going into service. [Completed 11-30-2010]
- (3) Submitting Evidence today with the Certification of Completion on SERC Portal. [Completed 12-15-2010]

Description of the information provided to SERC for their evaluation:

The following is submitted as evidence for completion of the first two of the three tasks above. The third task is completed as of this filing. Hence the evidence is only shown for the first two.

- (1) A copy of the memo submitted with the form, as well as notification of the TOP is submitted as entitled, Action Item 1 Evidence_MEMO_BLANK FORM_NOTE TO TOP.pdf Additionally, a copy of the updated procedure is supplied entitled, Generator Operation for Maintaining Network Voltage Schedules.pdf
- (2) A memo is submitted showing the sign-in sheets of who was trained as well as the training at Ohio Falls entitled, Action Item 2 Evidence_TRAINING SIGN-IN SHEETS_TRAINING MATERIAL.pdf
- (3) This is completed with the memo to SERCCOMPLY and materials of (1) & (2) above, as submitted.

I certify that the mitigation plan for the above-named violation has been completed on the date shown above. In doing so, I certify that all required mitigation plan actions described in Part D of the relevant mitigation plan have been completed, compliance has been restored, the above-named entity is currently compliant with all

of th requirements of the referenced standard, and that all information submitted is complete and correct to the best of my knowledge. Submit all supporting documentation.

Authorized Individual Signature [Sign](#)

Authorized Signatory John Voyles notified on 1/25/2011

Logged in as:

John Voyles

Log Out

Edit

Save PDF | Return to Mitigation Plan

* Required Fields

Status: Saved

All Mitigation Plan Completion Certification submittals shall include data or information sufficient for SERC to verify completion of the Mitigation Plan. SERC may request such additional data or information and conduct follow-up assessments, on-site or other Spot Checking, or Compliance Audits as it deems necessary to verify that all required actions in the Mitigation Plan have been completed and the Registered Entity is in compliance with the subject Reliability Standard. (CMEP Section 6.6) Data or information submitted may become part of a public record upon final disposition of the possible violation, therefore any confidential information contained therein should be marked as such in accordance with the provisions of Section 1500 of the NERC Rules of Procedure.

Name of Registered Entity submitting certification: **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**

Date of Certification: 08/08/2011

Name of Standard of mitigation violation(s): VAR-002-1.1a

Mitigated information:

Requirement	Tracking Number	Violation ID
R2.	SERC2010-400673	SERC201000578

Date of completion of the Mitigation Plan:

12/15/2010

Summary of all actions described in Part D of the releveant mitigation plan:

The following actions have been taken as a result of the May 28th Paddy's Run (PR) VAR-002-1 R2 incident:

- (1) Programming Logic has been added to the PR Controls: Programming logic was added to the PR controls which is conditional and queries the system to determine if any generation at Paddy's Run is synchronized to the grid. If not, no alarming will take place. In the event a unit is subsequently synchronized to the grid and is outside the TOP-defined voltage schedule, the responsible Operator receives an audible alarm. [Completed 07-09-10]
- (2) PR Bus Voltage has been added to the Cane Run Station DCS: The PR 140 kV A bus voltage reading was added to the DCS screens in the Cane Run control room so it is in view of a "second operator" in addition to the operator on site at Paddy's Run station when the unit is run. [Completed 08-20-10]
- (3) Affected Personnel have been trained: At the direction of the Production Supervisor, each CR/PR Production Leader and each CR/PR Operator have received a job briefing, which includes an explanation of VAR-002 standard and emphasizes the importance of adhering to the TOP-defined voltage schedule and notifying the TOP when the plant is unable to meet the Voltage Schedule. [Completed 10-14-10]
- (4) Close mitigation plan: With the submission of this certificate and supporting evidence to SERC, the mitigation plan is being closed as of the filing date to SERC. [Completed 12-15-10]

Description of the information provided to SERC for their evaluation:

Description of the information provided to SERC for their evaluation: The following is submitted as evidence for completion of the first three of the four tasks above. The fourth task is completed as of this filing. Hence the evidence is only shown for the first three.

- (1) A memo is submitted regarding the programming logic that was added to the Paddy's Run controls entitled, ACTION ITEM 1 EVIDENCE__MEMO_2010-07-09_Programming Logic to PR Controls.pdf

(2) A memo is submitted indicating the points were added to the DCS at Cane Run, as well as visuals of the points added entitled, ACTION ITEM 2 EVIDENCE__MEMO_(Embedded)_2010-08-20_INCLUDING POINTS CREATED.pdf

(3) The evidence of operators having the training, as well as the training sheets are submitted for Action Item 3 Evidence and is entitled, ACTION ITEM 3 EVIDENCE__TRAINING MATERIALS__SIGN-IN SHEETS.pdf

Authorized Signatory John Voyles notified on 8/4/2011

Signed By John Voyles on 8/8/2011

Logged in as:

John Voyles

Log Out

Edit

Save Item | Delete Item | Cancel Changes | Save PDF | Return to Mitigation Plan

* Required Fields

Status: Saved

- System Administration
- Committees
- Compliance
- Self Reports
- Complaints
- TFE Request
- Data Reporting
- Mitigation Plans
- Violation Retractions
- Reliability Assessments
- Surveys
- Recommendations
- Meetings

All Mitigation Plan Completion Certification submittals shall include data or information sufficient for SERC to verify completion of the Mitigation Plan. SERC may request such additional data or information and conduct follow-up assessments, on-site or other Spot Checking, or Compliance Audits as it deems necessary to verify that all required actions in the Mitigation Plan have been completed and the Registered Entity is in compliance with the subject Reliability Standard. (CMEP Section 6.6) Data or information submitted may become part of a public record upon final disposition of the possible violation, therefore any confidential information contained therein should be marked as such in accordance with the provisions of Section 1500 of the NERC Rules of Procedure.

Name of Registered Entity submitting certification: **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**

Name of Standard of mitigation violation(s): VAR-002-1.1a

Mitigated information:

Requirement	Tracking Number	Violation ID
R3.	SERC2010-400705	ID Not Assigned

Date of completion of the Mitigation Plan:

1/28/2011

Summary of all actions described in Part D of the releveant mitigation plan:

The following actions have been taken as a result of the VAR-002-1 R3 incident self-reported on 8/24/2010 for the Ghent Unit 4:

- 1) Lists were identified: a list of plant equipment which affects reactive capability was developed through discussions by engineering and operations personnel for both operators and their production leaders. [Completed 11/1/2010]
- 2) Lists were posted: a list of equipment identified in 1) above was posted in the control room in numerous visible locations. [Completed 11/15/2010]
- 3) Unit operators have been trained: the operators were trained and sign-in sheets were retained, as well as training materials. The training sheet indicates a column of when the operators are to call Simpsonville, which is the Transmission Dispatchers office (Transmission Operator – TOP). [Completed 12/22/2010]
- 4) Submit evidence: With the submission of this certificate and supporting evidence to SERC, the mitigation plan is being closed as of the filing date to SERC. [Completed 01/28/2011]

Description of the information provided to SERC for their evaluation:

The following is submitted as evidence for completion of the first three of the four tasks above. The fourth task is completed as of this filing. Hence the evidence is only shown for the first three.

- (1) A document is submitted regarding the lists that were identified entitled, Action Item 1 Evidence - GH4 - Identify Lists.pdf
- (2) A document is submitted showing where the lists were posted in the control room in numerous visible locations entitled, Action Item 2 Evidence - GH4 - Post Lists.pdf
- (3) The document containing personnel training materials, as well as the training sheets, being submitted for Action Item 3 Evidence is entitled, Action Item 3 Evidence - GH4 - Train Unit Operators.pdf

I certify that the mitigation plan for the above-named violation has been completed on the date shown above. In doing so, I certify that all required mitigation plan actions described in Part D of the relevant mitigation plan

have been completed, compliance has been restored, the above-named entity is currently compliant with all of th requirements of the referenced standard, and that all information submitted is complete and correct to the best of my knowledge. Submit all supporting documentation.

Authorized Individual Signature [Sign](#)

Authorized Signatory John Voyles notified on 1/28/2011

Attachment c

Record documents for the violations of TOP-002-2a and TOP-007-0:

- 1. LG&E & KU Self-Report for TOP-002-2a R16 dated August 31, 2010;**
 - 2. LG&E & KU Self-Report for TOP-007-0 R1 dated August 31, 2010;**
 - 3. LG&E & KU Mitigation Plan for TOP-002-2a R16 submitted on January 25, 2011;**
 - 4. LG&E & KU Mitigation Plan for TOP-007-0 R1 submitted on January 25, 2011;**
 - 5. LG&E & KU Certification of Completed Mitigation Plan for TOP-002-2a R16 dated July 29, 2011; and**
 - 6. LG&E & KU Certification of Completed Mitigation Plan for TOP-007-0 R1 dated July 29, 2011**
-

Logged in as:

Sharon Solochier

Log Out

Self Report Form - 2010

 Save PDF | [Return To Search Results](#)

This form has been locked.

If you need to edit data contained in this form, please contact your SERC Administrator.

This form was submitted on 8/31/2010.

* Required Fields

Status: Read Only

Region: SERC

NERC Registry ID: NCR01223

Joint Registration Organization (JRO) ID:

Registered Entity: E.ON U.S. Services Inc. for LG&E & KU Companies

Registered Entity Contact Information:

* Jorene Logan (jorene.logan@eon-us.com) 502-627-2923

Standard Applicable to Self-Report: TOP-002-2a

Requirement Applicable to Self-Report: R16.

Sub Requirements Applicable to Self-Report: R16.2.

Function Applicable to Self-Report: TOP

Has this possible alleged violation previously been reported or discovered: * ☒ Yes ☐ No

Provide NERC Violation ID (If known):

Date violation occurred: * 7/22/2010

Date violation discovered: * 7/29/2010

Is the violation still occurring? * ☒ Yes ☐ No

Detail explanation and cause of violation: *

The Middletown substation owned by Louisville Gas and Electric Company ("LG&E"), located in Middletown, Kentucky, contains three 345/138 kV transformers as well as three 138/69 kV transformers. Transformer 4 ("TR4") is a 345/138 kV transformer that interconnects the 345 kV bus to the 138 kV bus. LG&E is in the process of constructing a new 138 kV Middletown-Collins line which it expects to place into service in the Fall of 2010.

On July 22, 2010, EUS' Transmission Operations group identified a discrepancy between EUS' Contingency Analysis and the Reliability Coordinator's ("RC")(EUS' RC is the Tennessee Valley Authority) Areva Contingency Analysis for a particular N-1 scenario – the overloading of Middletown TR4 following the loss of Middletown Transformer 5 ("TR5") – during the peak load hours for the day. Although there was no overload in real time, the discrepancy in the contingency analyses caused concern and resulted in an inquiry into the situation. Over the course of the next few hours, EUS validated its Contingency Analysis results and identified the cause for the discrepancy (a modification to the facility rating of TR4 due to an on-site modification to the reconfiguration at Middletown to accommodate the construction of a new transmission line).

The temporary reconfiguration of TR4 on May 27, 2010 had resulted in a new limiting factor for the facility. EUS had completed the steps to reflect the new limiting factor on June 30, 2010, in its Facility Ratings Program. Changes to the facility ratings are generally used to update limit data and are uploaded to the EMS on a weekly basis, but due to the July 4 Holiday and a responsibility

rotation change, the updates were not made until July 20, 2010. At that time, through the update to the EMS, EUS updated its own model, but did not manually enter the new facility rating in the RC's portal [R16.2].

Once the cause for the discrepancy between EUS' and the RC's contingency analyses was identified on July 22, 2010, EUS began a parallel effort to identify immediate solutions to increase the rating of the facility and determined that the problem could be fixed before the next day's heavy load hours. Around 7 p.m., EUS submitted a request to the RC for an emergency overnight outage to correct the situation. Following the overnight outage, on July 23, 2010 EUS entered the new facility rating that was the result of the overnight work into the RC's portal. While the RC has not identified a specific time frame for facility rating updates, EUS believes that under R17, the Transmission Operator may have had an obligation to notify the RC of the current facility rating once it was clear that the RC did not have the correct rating for TR4.

Reliability Impact:

* Moderate

Reliability Impact Description:

*

Moderate. The situation, as described above, likely increased the risk to the EUS portion of the Bulk Electric System due to a risk of a cascading outage within the EUS system in a particular N-1 contingency (failure of the TR5), which could potentially overload the reconfigured TR4. However, there was no real-time overloading of TR4 at any point, and EUS actively monitored the facility due to early identification of the issue. Furthermore, EUS had in place a plan to address the contingency, if it occurred.

Additional Comments:

It is very unusual in EUS' experience for a substation construction project to result in a decrease (as opposed to an increase) in the capability of the facility. Thus, revising facility ratings as a result of a temporary substation reconfiguration has historically not required immediate revisions to facility model data.

NOTE: While submittal of a mitigation plan is not required until after a determination of a violation is confirmed, early submittal of a mitigation plan to address and remedy an identified deficiency is encouraged. Submittal of a mitigation plan shall not be deemed an admission of a violation. (See NERC Rules of Procedure, Appendix 4C, Section 6.4.)

 [Submit Self Report](#)

 [Save PDF](#) | [Return To Search Results](#)

Logged in as:
Sharon Solochier

Log Out

Self Report Form - 2010

 Save PDF | [Return To Search Results](#)

This form has been locked.

If you need to edit data contained in this form, please contact your SERC Administrator.

This form was submitted on 8/31/2010.

- ▶ System Administration
- ▶ Committees
- ▶ Compliance
- ▶ Self Reports
- ▶ Complaints
- ▶ TFE Request
- ▶ Data Reporting
- ▶ Mitigation Plans
- ▶ Violation Retractions
- ▶ Reliability Assessments
- ▶ Plants/Generators Surveys
- ▶ Recommendations Meetings

* Required Fields

Status: Read Only

Region: SERC

NERC Registry ID: NCR01223

Joint Registration Organization (JRO) ID:

Registered Entity: E.ON U.S. Services Inc. for LG&E & KU Companies

Registered Entity Contact Information:

* Jorene Logan (jorene.logan@eon-us.com) 502-627-2923

Standard Applicable to Self-Report: TOP-007-0

Requirement Applicable to Self-Report: R1.

Sub Requirements Applicable to Self-Report:

Function Applicable to Self-Report: TOP

Has this possible alleged violation previously been reported or discovered: * ☒ Yes ☐ No

Provide NERC Violation ID (If known):

Date violation occurred: * 7/22/2010 ▼

Date violation discovered: * 7/29/2010 ▼

Is the violation still occurring? * ☒ Yes ☐ No

Detail explanation and cause of violation: *

The Middletown substation owned by Louisville Gas and Electric Company ("LG&E"), located in Middletown, Kentucky, contains three 345/138 kV transformers as well as three 138/69 kV transformers. Transformer 4 ("TR4") is a 345/138 kV transformer that interconnects the 345 kV bus to the 138 kV bus. LG&E is in the process of constructing a new 138 kV Middletown-Collins line which it expects to place into service in the Fall of 2010.

On July 22, 2010, EUS' Transmission Operations group identified a discrepancy between EUS' Contingency Analysis and the Reliability Coordinator's ("RC")(EUS' RC is the Tennessee Valley Authority) Areva Contingency Analysis for a particular N-1 scenario – the overloading of Middletown TR4 following the loss of Middletown Transformer 5 ("TR5") – during the peak load hours for the day. Although there was no overload in real time, the discrepancy in the contingency analyses caused concern and resulted in an inquiry into the situation. Over the course of the next few hours, EUS validated its Contingency Analysis results and identified the cause for the discrepancy (a modification to the facility rating of TR4 due to an on-site modification to the reconfiguration at Middletown to accommodate the construction of a new transmission line).

The temporary reconfiguration of TR4 on May 27, 2010 had resulted in a new limiting factor for the facility. EUS had completed the steps to reflect the new limiting factor on June 30, 2010, in its Facility Ratings Program. Changes to the facility ratings are generally used to update limit data and

are uploaded to the EMS on a weekly basis, but due to the July 4 Holiday and a responsibility rotation change, the updates were not made until July 20, 2010. At that time, through the update to the EMS, EUS updated its own model, but did not manually enter the new facility rating in the RC portal.

Once the cause for the discrepancy between EUS' and the RC's contingency analyses was identified on July 22, 2010, EUS began a parallel effort to identify immediate solutions to increase the rating of the facility and determined that the problem could be fixed before the next day's heavy load hours. Around 7 p.m., EUS submitted a request to the RC for an emergency overnight outage to correct the situation. Following the overnight outage, on July 23, 2010 EUS entered the new facility rating that was the result of the overnight work into the RC's portal.

While the real-time loading over TR4 never exceeded the facility rating, the N-1 contingency could have overloaded the rerated TR4. EUS had operating procedures in place to react to this contingency, reducing the impact. However, the RC's System Operating Limits ("SOL") Methodology for Operations Horizon (effective October 1, 2008) states that an SOL exceedance occurs if an SOL is exceeded in actual real time operations or calculated to be exceeded in real time contingency analysis. Consequently, once EUS validated that its contingency analysis results reflected accurate facility ratings, it should have notified the RC of the SOL exceedance.

Reliability Impact:

* Moderate 6

Reliability Impact Description:

*

Moderate. The situation, as described above, likely increased the risk to the EUS portion of the Bulk Electric System due to a risk of a cascading outage within the EUS system in a particular N-1 contingency (failure of the TR5), which could potentially overload the reconfigured TR4. However, there was no real-time overloading of TR4 at any point, and EUS actively monitored the facility due to early identification of the issue. Furthermore, EUS had in place a plan to address the contingency, if it occurred.

Additional Comments:

It is very unusual in EUS' experience for a substation construction project to result in a decrease (as opposed to an increase) in the capability of the facility. Thus, revising facility ratings as a result of a temporary substation reconfiguration has historically not required immediate revisions to facility model data.

NOTE: While submittal of a mitigation plan is not required until after a determination of a violation is confirmed, early submittal of a mitigation plan to address and remedy an identified deficiency is encouraged. Submittal of a mitigation plan shall not be deemed an admission of a violation. (See NERC Rules of Procedure, Appendix 4C, Section 6.4.)

 Submit Self Report

 Save PDF | [Return To Search Results](#)

Logged in as:

John Voyles

Log Out

Edit - Mitigation Plan

Save Item Delete Item Cancel Changes Save PDF Return To Search Results

* Required Fields

Status: Saved

All Milestones have been Completed

Section A: Compliance Notices & Mitigation Plan Requirements

A.1 Notices and requirements applicable to Mitigation Plans and this Submittal Form are set forth in "Attachment A - Compliance Notices & Mitigation Plan Requirements" to this form.

A.2 ☐ I have reviewed Attachment A and understand that this Mitigation Plan Submittal Form will not be accepted unless this box is checked.

Section B: Registered Entity Information

B.1 Identify your organization

Company Name: LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

Company Address: P.O. Box 32020
Louisville, Kentucky
40232

NERC Compliance Registry ID: NCR01223

B.2 Identify the individual in your organization who will be the Entity Contact regarding this Mitigation Plan.

Name: * Keith Yocum Find Clear

E-Mail: keith.yocum@lge-ku.com

Section C: Identification of Alleged or Confirmed Violation(s) Associated with this Mitigation Plan

C.1 This Mitigation Plan is associated with the following Alleged or Confirmed violation(s) of the reliability standard listed below.

Applicable Standard, Requirement(s) and Date Reported to Region:

Standard: TOP-002-2a

- ☐ TOP-002-2a R17. (08/31/2010)
- ☐ TOP-002-2a R16.[TOP-002-2a R16.2.] (08/31/2010)

C.2 Identify the cause of the Alleged or Confirmed violation(s) identified above. Additional detailed information may be provided as an attachment:

The Middletown substation owned by LG&E/KU, located in Middletown, Kentucky, contains three 345/138 kV transformers including Transformer 4 (TR4). During the week of May 24, 2010, LG&E/KU substation crews were in the process of reconfiguring the 138 kV bus to permit termination and the Fall 2010 energization (occurred on November 8, 2010) of a new 138 KV line. Unforeseen complications required that LG&E/KU engineering implement the project in two phases – an interim temporary and a final, as-designed configuration. The temporary configuration was completed and TR4 was returned to service on May 27, 2010.

On July 22, 2010, LG&E/KU's real time contingency analysis began to show that a System Operating Limit (SOL) was being exceeded. A discrepancy was identified between a contingency analysis performed by LG&E/KU and one by the Reliability Coordinator's (RC) for a particular N-1, peak load scenario – an overload of the TR4 facility following the loss of Middletown Transformer 5 (TR5). Although there was no real time overload, over the course of the next few hours, LG&E/KU validated the accuracy of its contingency analysis results and identified that the cause was a modification to the TR4 facility rating. LG&E/KU did not notify the RC of the updated facility rating of the TR4 facility pending verification of the information.

* The temporary reconfiguration of TR4 on May 27, 2010 had resulted in a new limiting element for the TR4 facility. On June 30, 2010, LG&E/KU had completed the steps required to reflect the new limiting element in its Facility Ratings Program (FRP). However, the updated ratings from the FRP are not available for use by LG&E/KU transmission operations, including the LG&E/KU contingency analysis, until they are uploaded to the LG&E/KU Energy Management System (EMS). These rating updates to the EMS are typically made each week, but due to the July 4 holiday and a responsibility rotation change, the updates were not made until July 20, 2010.

On July 20, 2010, the data used by LG&E/KU transmission operations reflected the correct updated rating for the TR4 facility, however, the information used by the RC's contingency analysis did not. EMS updates are not automatically supplied to the RC, but must be manually entered into the RC's portal. This had not yet occurred in this case.

Once the TR4 rating discrepancy was identified on July 22, 2010, LG&E/KU determined that the ratings limitation could be alleviated before the next day's peak. Around 7 p.m. on July 22, 2010, LG&E/KU requested that the RC approve an emergency overnight outage, however, LG&E/KU did not at this time or earlier notify the RC of the updated rating for the TR4 facility.

After RC approval of the outage, the ratings limitation was fixed, and on July 23, 2010 LG&E/KU entered the resulting new facility rating for the TR4 facility into the FRP, the EMS, and the RC's portal.

C.3 Provide any additional relevant information regarding the Alleged or Confirmed violations associated with this Mitigation Plan.

Additional detailed information may be provided as an attachment:

* None

Section D: Details of Proposed Mitigation Plan

D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the Alleged or Confirmed violations identified above in Part C.1 of this form.

Additional detailed information may be provided as an attachment:

Completed Corrective Actions

The following actions were taken shortly after the discovery of this potential violation to ensure that updated facility ratings were shared with the RC in a timely manner in accordance with TOP-002-2a, R16.2 and R17:

- LG&E/KU met with the RC to explain the circumstances leading to the collection of self reports made by LG&E/KU related to this situation. LG&E/KU confirmed that the RC had no concerns about the existing communications protocols between the two organizations. The RC agreed that the communication issues requiring attention were internal to LG&E/KU.
- LG&E/KU senior managers met with the management teams responsible for Transmission Operations, Transmission Protection and Substations, and Transmission Planning to ensure that operations personnel understand that they have full authority to make decisions and take actions to protect the bulk electric system.

Planned Corrective Actions

1. Develop Training Plan– Develop training materials and content. Proposed completion date March 31, 2011.


- * 2. Training – LG&E/KU will train all of its transmission system operators, the managers to whom those personnel directly report, and appropriate senior managers. This training, which will supplement annual training that already occurs, will cover NERC requirements and LG&E/KU policies relevant to compliance with TOP-002-2a, R16.2 and R17, including (a) the timing requirements for communications with the RC, (b) the process for communications with the RC when there is an uncertainty in information available to operators, and (c) the authority of operators to take actions when necessary. Proposed completion date: May 31, 2011.

3. Responsibilities and Staffing of System Operator Desk - LG&E/KU will reorganize the responsibilities and staffing of its transmission system operations desks. Accordingly, the responsibility for monitoring the State Estimator and Contingency Analysis applications will be

assigned to the recently-created System Operations Desk (the System Operations Desk already serves as the primary point of contact with the RC and LG&E/KU management). The operators assigned to the System Operations Desk will be limited to senior operators who will be provided additional training. This additional training will cover (a) use of the State Estimator and Contingency Analysis applications and advanced troubleshooting techniques to identify potential issues with sufficient solution quality, and (b) dealing with system reliability issues and adhering to NERC Reliability Standards, RC procedures, and LG&E/KU internal operating procedures. Proposed completion date: June 30, 2011.

4. Submit Closure Documentation – LG&E/KU will submit the SERC-required mitigation plan certification of closure, as well as any required evidence of closure of the mitigation plan. Proposed completion date: July 31, 2011.

D.2 Provide the date by which full implementation of the Mitigation Plan will be, or has been, completed with respect to the Alleged or Confirmed violations identified above. State whether the Mitigation Plan has been fully implemented:


* 7/31/2011 

D.3 Enter Milestone Activities, with due dates, that your organization is proposing, or has completed, for this Mitigation Plan:

Milestone	Status	Due Date	Completed Date
Develop Training Plan	Milestone Pending	3/31/2011	Detail
Training	Milestone Pending	5/31/2011	Detail
Responsibilities and Staffing of System Operator Desk	Milestone Pending	6/30/2011	Detail
Close Mitigation Plan	Milestone Pending	7/31/2011	Detail
Add New Mitigation Plan Milestone			


Section E: Interim and Future Reliability Risk

Abatement of Interim BPS Reliability Risk

E.1 While your organization is implementing this Mitigation Plan the reliability of the Bulk Power System (BPS) may remain at higher risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take to mitigate this increased risk to the reliability of the BPS. 
Additional detailed information may be provided as an attachment:

* While this Mitigation Plan is being implemented, there is a small risk of a repeat of the failure to communicate which is at issue in the related self report, particularly given that human intervention is necessary to make the required communications. However, those steps described herein that have already been taken by LG&E/KU greatly minimize the risk of any failure to communicate with the RC in violation of TOP-002-2a, R16.2 and R17. LG&E/KU personnel already have a high degree of awareness of the relevant issues. The additional steps to be completed in connection with this Mitigation Plan simply provide a stronger reinforcement of the awareness that already exists. Accordingly, any risk to the Bulk Electric System during the implementation of this Mitigation Plan is small.

Prevention of Future BPS Reliability Risk

E.2 Describe how successful completion of this Mitigation Plan will prevent or minimize the probability that your organization incurs further risk of Alleged violations of the same or similar reliability standards requirements in the future. 
Additional detailed information may be provided as an attachment:

* Human intervention is necessary for the communications required pursuant to TOP-002-2a, R16.2 and R17. Thus, the additional training and other steps noted in this Mitigation Plan will help ensure that the individuals responsible for these activities will be aware of the communications needs.

Section F: Authorization

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

a) Submits this Mitigation Plan for acceptance by **SERC** and approval by NERC, and

b) If applicable, certifies that this Mitigation Plan was completed on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and

c) Acknowledges:

1. I am **John Voyles of LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**
2. I am qualified to sign this Mitigation Plan on behalf of **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**
3. I understand **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company's** obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))
4. I have read and am familiar with the contents of this Mitigation Plan
5. **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company** agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by **SERC** and approved by NERC

Authorized Signatory John Voyles notified on 1/25/2011

Authorized Individual Signature [Sign](#)

Section G: Regional Entity Contact

Please direct any questions regarding completion of this form to:

John Wolfmeyer
SERC Compliance Engineer
SERC Reliability Corporation
704-940-8216
jwolfmeyer@serc1.org

 Save Item |  Delete Item | Cancel Changes |  Save PDF | [Return To Search Results](#)

Logged in as:

John Voyles

Log Out

Edit - Mitigation Plan

Save Item Delete Item Cancel Changes Save PDF Return To Search Results

* Required Fields

Status: Saved

All Milestones have been Completed

Section A: Compliance Notices & Mitigation Plan Requirements

A.1 Notices and requirements applicable to Mitigation Plans and this Submittal Form are set forth in "Attachment A - Compliance Notices & Mitigation Plan Requirements" to this form.

A.2 ☐ I have reviewed Attachment A and understand that this Mitigation Plan Submittal Form will not be accepted unless this box is checked.

Section B: Registered Entity Information

B.1 Identify your organization

Company Name: LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

Company Address: P.O. Box 32020
Louisville, Kentucky
40232

NERC Compliance Registry ID: NCR01223

B.2 Identify the individual in your organization who will be the Entity Contact regarding this Mitigation Plan.

Name: * Keith Steinmetz Find Clear

E-Mail: keith.steinmetz@lge-ku.com

Section C: Identification of Alleged or Confirmed Violation(s) Associated with this Mitigation Plan

C.1 This Mitigation Plan is associated with the following Alleged or Confirmed violation(s) of the reliability standard listed below.

Applicable Standard, Requirement(s) and Date Reported to Region:

Standard: TOP-007-0 6

☐ TOP-007-0 R1. (08/31/2010)

C.2 Identify the cause of the Alleged or Confirmed violation(s) identified above. Additional detailed information may be provided as an attachment:

The Middletown substation owned by LG&E/KU, located in Middletown, Kentucky, contains three 345/138 kV transformers including Transformer 4 (TR4). During the week of May 24, 2010, LG&E/KU substation crews were in the process of reconfiguring the 138 kV bus to permit termination and the Fall 2010 energization (occurred on November 8, 2010) of a new 138 KV line. Unforeseen complications required that LG&E/KU engineering implement the project in two phases – an interim temporary and a final, as-designed configuration. The temporary configuration was completed and TR4 was returned to service on May 27, 2010.

On July 22, 2010, LG&E/KU's real time contingency analysis began to show that a System Operating Limit (SOL) was being exceeded. A discrepancy was identified between a contingency analysis performed by LG&E/KU and one by the Reliability Coordinator's (RC) for a particular N-1, peak load scenario – an overload of the TR4 facility following the loss of Middletown Transformer 5 (TR5). Although there was no real time overload, over the course of the next few hours, LG&E/KU validated the accuracy of its contingency analysis results and identified that the cause was a modification to the TR4 facility rating. LG&E/KU did not notify the RC of the updated facility rating of the TR4 facility pending verification of the information.

The temporary reconfiguration of TR4 on May 27, 2010 had resulted in a new limiting element

* for the TR4 facility. On June 30, 2010, LG&E/KU had completed the steps required to reflect the new limiting element in its Facility Ratings Program (FRP). However, the updated ratings from the FRP are not available for use by LG&E/KU transmission operations, including the LG&E/KU contingency analysis, until they are uploaded to the LG&E/KU Energy Management System (EMS). These rating updates to the EMS are typically made each week, but due to the July 4 holiday and a responsibility rotation change, the updates were not made until July 20, 2010.

On July 20, 2010, the data used by LG&E/KU transmission operations reflected the correct updated rating for the TR4 facility, however, the information used by the RC's contingency analysis did not. EMS updates are not automatically supplied to the RC, but must be manually entered into the RC's portal. This had not yet occurred in this case.

Once the TR4 rating discrepancy was identified on July 22, 2010, LG&E/KU determined that the ratings limitation could be alleviated before the next day's peak. Around 7 p.m. on July 22, 2010, LG&E/KU requested that the RC approve an emergency overnight outage, however, LG&E/KU did not at this time or earlier notify the RC of the updated rating for the TR4 facility.

After RC approval of the outage, the ratings limitation was fixed, and on July 23, 2010 LG&E/KU entered the resulting new facility rating for the TR4 facility into the FRP, the EMS, and the RC's portal.

C.3 Provide any additional relevant information regarding the Alleged or Confirmed violations associated with this Mitigation Plan.

Additional detailed information may be provided as an attachment:

* None

Section D: Details of Proposed Mitigation Plan

D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the Alleged or Confirmed violations identified above in Part C.1 of this form.

Additional detailed information may be provided as an attachment:

Completed Corrective Actions

The following actions were taken shortly after the discovery of this potential violation to ensure that updated facility ratings were shared with the RC in a timely manner in accordance with TOP-002-2a, R16.2 and R17:

- LG&E/KU met with the RC to explain the circumstances leading to the collection of self reports made by LG&E/KU related to this situation. LG&E/KU confirmed that the RC had no concerns about the existing communications protocols between the two organizations. The RC agreed that the communication issues requiring attention were internal to LG&E/KU.
- LG&E/KU senior managers met with the management teams responsible for Transmission Operations, Transmission Protection and Substations, and Transmission Planning to ensure that operations personnel understand that they have full authority to make decisions and take actions to protect the bulk electric system.

Planned Corrective Actions

1. Develop Training Plan– Develop training materials and content. Proposed completion date March 31, 2011.

- * 2. Training – LG&E/KU will train all of its transmission system operators, the managers to whom those personnel directly report, and appropriate senior managers. This training, which will supplement annual training that already occurs, will cover NERC requirements and LG&E/KU policies relevant to compliance with TOP-002-2a, R16.2 and R17, including (a) the timing requirements for communications with the RC, (b) the process for communications with the RC when there is an uncertainty in information available to operators, and (c) the authority of operators to take actions when necessary. Proposed completion date: May 31, 2011.

3. Responsibilities and Staffing of System Operator Desk - LG&E/KU will reorganize the responsibilities and staffing of its transmission system operations desks. Accordingly, the responsibility for monitoring the State Estimator and Contingency Analysis applications will be assigned to the recently-created System Operations Desk (the System Operations Desk

already serves as the primary point of contact with the RC and LG&E/KU management). The operators assigned to the System Operations Desk will be limited to senior operators who will be provided additional training. This additional training will cover (a) use of the State Estimator and Contingency Analysis applications and advanced troubleshooting techniques to identify potential issues with sufficient solution quality, and (b) dealing with system reliability issues and adhering to NERC Reliability Standards, RC procedures, and LG&E/KU internal operating procedures. Proposed completion date: June 30, 2011.

4. Submit Closure Documentation – LG&E/KU will submit the SERC-required mitigation plan certification of closure, as well as any required evidence of closure of the mitigation plan. Proposed completion date: July 31, 2011.

D.2 Provide the date by which full implementation of the Mitigation Plan will be, or has been, completed with respect to the Alleged or Confirmed violations identified above. State whether the Mitigation Plan has been fully implemented:

* 7/31/2011

D.3 Enter Milestone Activities, with due dates, that your organization is proposing, or has completed, for this Mitigation Plan:

Milestone	Status	Due Date	Completed Date
Develop Training Plan	Milestone Pending	3/31/2011	Detail
Training	Milestone Pending	5/31/2011	Detail
Responsibilities and Staffing of System Operator Desk	Milestone Pending	6/30/2011	Detail
Close Mitigation Plan	Milestone Pending	7/31/2011	Detail
Add New Mitigation Plan Milestone			

Section E: Interim and Future Reliability Risk

Abatement of Interim BPS Reliability Risk

E.1 While your organization is implementing this Mitigation Plan the reliability of the Bulk Power System (BPS) may remain at higher risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take to mitigate this increased risk to the reliability of the BPS.

Additional detailed information may be provided as an attachment:

* While this Mitigation Plan is being implemented, there is a small risk of a repeat of the failure to communicate at issue in the related self report, particularly given that human intervention is required to make the required communications. However, those steps described herein that have already been taken by LG&E/KU greatly minimize the risk of any failure to communicate with the RC in violation of TOP-007-0, R1. LG&E/KU personnel already have a high degree of awareness of the relevant issues. The additional steps to be completed in connection with this Mitigation Plan simply provide a stronger reinforcement of the awareness that already exists. Accordingly, any risk to the Bulk Electric System during the implementation of this Mitigation Plan is small.

Prevention of Future BPS Reliability Risk

E.2 Describe how successful completion of this Mitigation Plan will prevent or minimize the probability that your organization incurs further risk of Alleged violations of the same or similar reliability standards requirements in the future.

Additional detailed information may be provided as an attachment:

* Human intervention is necessary for the communications required pursuant to TOP-007-0, R1. Thus, the additional training and other steps noted in this Mitigation Plan will help ensure that the individuals responsible for these activities will be aware of the communications needs.

Section F: Authorization

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

- Submits this Mitigation Plan for acceptance by **SERC** and approval by NERC, and
- If applicable, certifies that this Mitigation Plan was completed on or before the date provided as the

'Date of Completion of the Mitigation Plan' on this form, and

c) Acknowledges:

1. I am **John Voyles of LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**
2. I am qualified to sign this Mitigation Plan on behalf of **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**
3. I understand **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company's** obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))
4. I have read and am familiar with the contents of this Mitigation Plan
5. **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company** agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by **SERC** and approved by NERC

Authorized Signatory John Voyles notified on 1/25/2011

Authorized Individual Signature [Sign](#)

Section G: Regional Entity Contact

Please direct any questions regarding completion of this form to:

John Wolfmeyer
SERC Compliance Engineer
SERC Reliability Corporation
704-940-8216
jwolfmeyer@serc1.org

 [Save Item](#) |  [Delete Item](#) | [Cancel Changes](#) |  [Save PDF](#) | [Return To Search Results](#)

Logged in as:

Edwin Staton

Log Out

Edit

Save PDF | Return to Mitigation Plan

* Required Fields

Status: Saved

All Mitigation Plan Completion Certification submittals shall include data or information sufficient for SERC to verify completion of the Mitigation Plan. SERC may request such additional data or information and conduct follow-up assessments, on-site or other Spot Checking, or Compliance Audits as it deems necessary to verify that all required actions in the Mitigation Plan have been completed and the Registered Entity is in compliance with the subject Reliability Standard. (CMEP Section 6.6) Data or information submitted may become part of a public record upon final disposition of the possible violation, therefore any confidential information contained therein should be marked as such in accordance with the provisions of Section 1500 of the NERC Rules of Procedure.

Name of Registered Entity submitting certification: **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**

Date of Certification: 07/29/2011

Name of Standard of mitigation violation(s): TOP-002-2aTOP-002-2a

Mitigated information:

Requirement	Tracking Number	Violation ID
R16.	SERC2010-400712	SERC201000604
R17.	SERC2010-400713	SERC201000605

Date of completion of the Mitigation Plan:

6/27/2011

Summary of all actions described in Part D of the releveant mitigation plan:

LG&E/KU met with the RC to explain the circumstances leading to the collection of self reports made by LG&E/KU related to this situation. LG&E/KU confirmed that the RC had no concerns about the existing communications protocols between the two organizations. The RC agreed that the communication issues requiring attention were internal to LG&E/KU. Immediate Corrective Action

LGE&KU senior managers met with the management teams responsible for Transmission Operations, Transmission Protection and Substations, and Transmission Planning to ensure that operations personnel understand that they have full authority to make decisions and take actions to protect the bulk electric system. Immediate Corrective Action

Developed training materials and content with focus on communications with the Reliability Coordinator. Milestone #1

LG&E/KU trained all of its transmission system operators, the managers to whom those personnel directly report, and appropriate senior managers. This training, supplemented annual training that already occurs, the training covered NERC requirements and LG&E/KU policies relevant to compliance with TOP-002-2a, R16.2 and R17, including (a) the timing requirements for communications with the RC, (b) the process for communications with the RC when there is an uncertainty in information available to operators, and (c) the authority of operators to take actions when necessary. Milestone #2

LG&E/KU reorganized the responsibilities and staffing of its transmission system operations desks. Accordingly, the responsibility for monitoring the State Estimator and Contingency

Analysis applications was assigned to the recently-created System Operations Desk (the System Operations Desk already served as the primary point of contact with the RC and LG&E/KU management). The operators assigned to the System Operations Desk are limited to senior operators who were provided additional training. This additional training covered (a) use of the State Estimator and Contingency Analysis applications and advanced troubleshooting techniques to identify potential issues with sufficient solution quality, and (b) dealing with system reliability issues and adhering to NERC Reliability Standards, RC procedures, and LG&E/KU internal operating procedures. Milestone #3

Description of the information provided to SERC for their evaluation:

See Introduction.xlsx for a description of each file that supports milestone completion. Due to the combined file size, all files supporting the completion of each milestone were sent to the SERC Comply email address.

I certify that the mitigation plan for the above-named violation has been completed on the date shown above. In doing so, I certify that all required mitigation plan actions described in Part D of the relevant mitigation plan have been completed, compliance has been restored, the above-named entity is currently compliant with all of the requirements of the referenced standard, and that all information submitted is complete and correct to the best of my knowledge. Submit all supporting documentation.

Authorized Signatory Edwin Staton notified on 7/28/2011

Signed By Edwin Staton on 7/29/2011

Logged in as:

Edwin Staton

Log Out

Edit

Save PDF | Return to Mitigation Plan

* Required Fields

Status: Saved

All Mitigation Plan Completion Certification submittals shall include data or information sufficient for SERC to verify completion of the Mitigation Plan. SERC may request such additional data or information and conduct follow-up assessments, on-site or other Spot Checking, or Compliance Audits as it deems necessary to verify that all required actions in the Mitigation Plan have been completed and the Registered Entity is in compliance with the subject Reliability Standard. (CMEP Section 6.6) Data or information submitted may become part of a public record upon final disposition of the possible violation, therefore any confidential information contained therein should be marked as such in accordance with the provisions of Section 1500 of the NERC Rules of Procedure.

Name of Registered Entity submitting certification: **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**

Date of Certification: 07/29/2011

Name of Standard of mitigation violation(s): TOP-007-0

Mitigated information:

Requirement	Tracking Number	Violation ID
R1.	SERC2010-400714	SERC201000606

Date of completion of the Mitigation Plan:

6/27/2011

Summary of all actions described in Part D of the releveant mitigation plan:

LG&E/KU met with the RC to explain the circumstances leading to the collection of self reports made by LG&E/KU related to this situation. LG&E/KU confirmed that the RC had no concerns about the existing communications protocols between the two organizations. The RC agreed that the communication issues requiring attention were internal to LG&E/KU. Immediate Corrective Action

LGE&KU senior managers met with the management teams responsible for Transmission Operations, Transmission Protection and Substations, and Transmission Planning to ensure that operations personnel understand that they have full authority to make decisions and take actions to protect the bulk electric system. Immediate Corrective Action

Developed training materials and content with focus on communications with the Reliability Coordinator. Milestone #1

LG&E/KU trained all of its transmission system operators, the managers to whom those personnel directly report, and appropriate senior managers. This training, supplemented annual training that already occurs, the training covered NERC requirements and LG&E/KU policies relevant to compliance with TOP-002-2a, R16.2 and R17, including (a) the timing requirements for communications with the RC, (b) the process for communications with the RC when there is an uncertainty in information available to operators, and (c) the authority of operators to take actions when necessary. Milestone #2

LG&E/KU reorganized the responsibilities and staffing of its transmission system operations desks. Accordingly, the responsibility for monitoring the State Estimator and Contingency Analysis applications was assigned to the recently-created System Operations Desk (the System Operations Desk already served as the primary point of contact with the RC and

LG&E/KU management). The operators assigned to the System Operations Desk are limited to senior operators who were provided additional training. This additional training covered (a) use of the State Estimator and Contingency Analysis applications and advanced troubleshooting techniques to identify potential issues with sufficient solution quality, and (b) dealing with system reliability issues and adhering to NERC Reliability Standards, RC procedures, and LG&E/KU internal operating procedures. Milestone #3

Description of the information provided to SERC for their evaluation:

See Introduction.xlsx for a description of each file that supports milestone completion. Due to the combined file size, all files supporting the completion of each milestone were sent to the SERC Comply email address.

I certify that the mitigation plan for the above-named violation has been completed on the date shown above. In doing so, I certify that all required mitigation plan actions described in Part D of the relevant mitigation plan have been completed, compliance has been restored, the above-named entity is currently compliant with all of the requirements of the referenced standard, and that all information submitted is complete and correct to the best of my knowledge. Submit all supporting documentation.

Authorized Signatory Edwin Staton notified on 7/28/2011

Signed By Edwin Staton on 7/29/2011

Attachment d

Record documents for the violation of FAC-009-1 R1:

- 1. LG&E & KU Self-Report for FAC-009-1 R1 dated August 31, 2010;**
 - 2. LG&E & KU Mitigation Plan for FAC-009-1 R1 submitted on January 25, 2011; and**
 - 3. LG&E & KU Certification of Completed Mitigation Plan for FAC-009-1 R1 dated January 3, 2012.**
-

Logged in as:
Sharon Solochier

Log Out

Self Report Form - 2010

 Save PDF | Return To Search Results

This form has been locked.

If you need to edit data contained in this form, please contact your SERC Administrator.

This form was submitted on 8/31/2010.

- ▶ System Administration
- ▶ Committees
- ▶ Compliance
- ▶ Self Reports
- ▶ Complaints
- ▶ TFE Request
- ▶ Data Reporting
- ▶ Mitigation Plans
- ▶ Violation Retractions
- ▶ Reliability Assessments
- ▶ Plants/Generators Surveys
- ▶ Recommendations Meetings

* Required Fields

Status: Read Only

Region: SERC

NERC Registry ID: NCR01223

Joint Registration Organization (JRO) ID:

Registered Entity: E.ON U.S. Services Inc. for LG&E & KU Companies

Registered Entity Contact Information:

* Jorene Logan (jorene.logan@eon-us.com) 502-627-2923

Standard Applicable to Self-Report: FAC-009-1

Requirement Applicable to Self-Report: R1.

Sub Requirements Applicable to Self-Report:

Function Applicable to Self-Report: TO

Has this possible alleged violation previously been reported or discovered: * ☒ Yes ☐ No

Provide NERC Violation ID (If known):

Date violation occurred: * 5/27/2010 ▼

Date violation discovered: * 7/29/2010 ▼

Is the violation still occurring? * ☒ Yes ☐ No

Detail explanation and cause of violation: *

The Middletown substation owned by Louisville Gas and Electric Company ("LG&E"), located in Middletown, Kentucky, contains three 345/138 kV transformers as well as three 138/69 kV transformers. Transformer 4 ("TR4") is a 345/138 kV transformer that interconnects the 345 kV bus to the 138 kV bus. LG&E is in the process of constructing a new 138 kV Middletown-Collins line which it expects to place into service in the Fall of 2010.

During the week of May 24, 2010, E.ON US ("EUS") substation crews reconfigured certain equipment at TR4 in preparation for the new Middletown-Collins line. The reconfiguration was scheduled to facilitate the Fall 2010 energization of the new line, but due to required line construction, the engineering team decided to modify the construction plan to implement the reconfiguration in two phases – an immediate temporary configuration, and a final configuration during the Fall of 2010. The temporary configuration was complete and TR4 was returned to service on May 27, 2010. The temporary configuration, however, placed certain pre-existing equipment in a position where that equipment became the new limiting factor for the transmission facility. This new limiting factor for TR4 was not reflected in EUS' Facility Rating Program at that time.

On June 30, 2010, EUS' Transmission Protection group completed the necessary steps for the Facility Rating Program to reflect that the most limiting element on TR4 reduced the rating of the facility to 345 MVA. Under the prior configuration, the rating for TR4 was 515 MVA.

Reliability Impact:

* Moderate 6

Reliability Impact Description:

*

Moderate because accurate facility ratings are necessary to plan and operate the system, but EUS' Facility Rating Program addressed and included the correct data once the on-site engineering modifications were identified. The impact was further reduced because no real-time overloading of TR4 actually occurred.

Additional Comments:

It is very unusual in EUS' experience for a substation construction project to result in a decrease (as opposed to an increase) in the capability of the facility. Thus, revising facility ratings as a result of a temporary substation reconfiguration has historically not required immediate revisions to facility model data.

NOTE: While submittal of a mitigation plan is not required until after a determination of a violation is confirmed, early submittal of a mitigation plan to address and remedy an identified deficiency is encouraged. Submittal of a mitigation plan shall not be deemed an admission of a violation. (See NERC Rules of Procedure, Appendix 4C, Section 6.4.)

 [Submit Self Report](#) [Save PDF](#) | [Return To Search Results](#)

Logged in as:

John Voyles

Log Out

Edit - Mitigation Plan

Save Item Delete Item Cancel Changes Save PDF Return To Search Results

* Required Fields

Status: Saved

All Milestones have been Completed

Section A: Compliance Notices & Mitigation Plan Requirements

A.1 Notices and requirements applicable to Mitigation Plans and this Submittal Form are set forth in "Attachment A - Compliance Notices & Mitigation Plan Requirements" to this form.

A.2 ☐ I have reviewed Attachment A and understand that this Mitigation Plan Submittal Form will not be accepted unless this box is checked.

Section B: Registered Entity Information

B.1 Identify your organization

Company Name: LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company

Company Address: P.O. Box 32020
Louisville, Kentucky
40232

NERC Compliance Registry ID: NCR01223

B.2 Identify the individual in your organization who will be the Entity Contact regarding this Mitigation Plan.

Name: * Virginia Whitaker Find Clear

E-Mail: virginia.whitaker@lge-ku.com

Section C: Identification of Alleged or Confirmed Violation(s) Associated with this Mitigation Plan

C.1 This Mitigation Plan is associated with the following Alleged or Confirmed violation(s) of the reliability standard listed below.

Applicable Standard, Requirement(s) and Date Reported to Region:

Standard: FAC-009-1 6

☐ FAC-009-1 R1. (08/31/2010)

C.2 Identify the cause of the Alleged or Confirmed violation(s) identified above. Additional detailed information may be provided as an attachment:

The Middletown substation owned by LG&E/KU, located in Middletown, Kentucky, contains three 345/138 kV transformers, including Transformer 4 (TR4) which connect to a 138 kV bus. During the week of May 24, 2010, LG&E/KU substation crews were in the process of reconfiguring the 138 kV bus to permit termination and the Fall 2010 energization (occurred on November 8, 2010) of a new 138 kV line project.

Unforeseen complications required that the LG&E/KU engineering team implement the project in two phases – an interim temporary configuration, and a final, as-designed configuration planned for the Fall of 2010. The temporary configuration was completed and TR4 was returned to service on May 27, 2010. However, certain pre-existing equipment retained in the temporary configuration became a new limiting factor for the TR4 facility rating.

On May 27, 2010, the new limiting factor for TR4 was not reflected in the LG&E/KU Facility Rating Program (FRP - software which calculates and tracks all transmission facility and current carrying equipment ratings). Thus, the rating of TR4 should have been reduced to 345 MVA from 515 MVA. The incorrect rating was in use by LG&E/KU between May 27, 2010 and July 20, 2010. Additionally, TVA, the RC for LG&E/KU, used incorrect ratings for TR4 between May 27, 2010 and July 23, 2010.

C.3 Provide any additional relevant information regarding the Alleged or Confirmed violations associated with this Mitigation Plan.

Additional detailed information may be provided as an attachment:

- * Historically, it has normally been LG&E/KU's experience that construction projects result in increases to a facility's rating. It is generally not planned for a project to reduce the capability of a facility. In this instance, the unplanned interruption in the project schedule, and the resulting temporary reconfiguration, presented a new limiting factor in the facility that was not previously identified in the planning of the project.

Section D: Details of Proposed Mitigation Plan

D.1 Identify and describe the action plan, including specific tasks and actions that your organization is proposing to undertake, or which it undertook if this Mitigation Plan has been completed, to correct the Alleged or Confirmed violations identified above in Part C.1 of this form.

Additional detailed information may be provided as an attachment:

Completed Corrective Actions

The following actions were taken shortly after the discovery of this potential violation to ensure that facility ratings for LG&E/KU transmission facilities are consistent with the LG&E/KU Facility Rating Methodology:

- LG&E/KU's "common clearance" software (used to request construction outages) was upgraded to include a required field to identify any facility ratings impact associated with an outage request. Additionally, the request is now evaluated by operations engineering prior to scheduling the outage.

If a system condition (such as an emergency system restoration) requires equipment to be returned to service prior to rating's evaluation, it will be returned to service utilizing the previously established rating, unless the emergency work results in a reconfiguration or addition of a new piece of equipment that could impact the previously established rating. In these instances, an operations engineering review will be completed prior to returning the facility to service to ensure rating impacts are recognized and addressed.

- A complete review of the process for updating the FRP has been completed and the program and related processes updated to properly address facility ratings. This review of the FRP process resulted in separate approaches for equipment upgrades and derates.

Equipment Upgrades:

Transmission Substation and Protection and Transmission Lines engineers, when designing projects that will change the rating of current carrying equipment, will submit preliminary FRP data. The FRP operator will enter the new ratings as preliminary in FRP. When the project is complete, as-designed, the FRP operator will change the rating from preliminary status to active status upon notification from the project engineer. Any projects that rely on additional work from 3rd party entities (i.e. distribution owners), or if the line is required back in service before completion of the project, will require the most conservative rating to remain in effect until the project is complete or further evaluated. Updated ratings information shall be entered into FRP as active within 7 business days from notification by the project engineer.

Equipment De-rates:

All element de-rates will be communicated immediately to the Transmission Control Center. These will be manually updated in the EMS. Rating changes that result in a reduction in the current carrying capability of transmission equipment must be manually updated in the Energy Management System (EMS) SCADA application for alarming the Electric System Coordinators (ESCs). This manual update can only be done by someone with database administrative control of the EMS. The Group Leader Electric System Coordination (GLESC) will be responsible for making these updates in the EMS SCADA application until the temperature based ratings maintained in the Facility Rating Program (FRP) can be implemented by the Transmission Strategy and Planning group and EMS/IT support group.

The Transmission Strategy and Planning or EMS/IT support group will notify the GLESC when the updates to the temperature based ratings files are implemented. At this time the GLESC will change the name of the EMS SCADA transmission element back to the original name and the new temperature based ratings will be populated in the database for alarming to the ESCs.

Planned Corrective Actions

The following actions are in the process of being taken by LG&E/KU:

1. Report to SERC on status of Cascade implementation. Proposed Completion Date: March 31, 2011.
2. Report to SERC on status of Cascade implementation. Proposed Completion Date: June 30, 2011
3. Cascade Application Development - LG&E/KU is currently implementing a new operational tool that will replace the FRP. Currently, Microsoft Access is used to implement the FRP, and that will be replaced with the Cascade asset management system. Although Microsoft Access meets all of the technical requirements to maintain the FRP, it has several shortcomings which are addressed by the new software. For example, the current program only allows one person to access or input data, while the Cascade program will allow field personnel, such as qualified technicians and engineers, to have access to the equipment database, tie records together, see trends and evaluate information, including ratings, for individual assets within the transmission system. Also, the Cascade program will be able to update and advise operators when ratings for the system drop. Proposed Completion Date: August 31, 2011.
4. Train Personel on Cascade - Appropriate personnel will be trained on the use and implementation of the Cascade program. Emphasis will be placed on timely and accurate input of data, especially when field plan modifications occur. Proposed Completion Date: October 31, 2011.
5. Cascade Transition and Implementation - Cascade will be placed in testing mode to ensure proper implementation, accuracy, and understanding by all personnel. Proposed Completion Date: November 30, 2011.
6. Close Mitigation Plan – LG&E/KU will submit the SERC-required mitigation plan certification of closure, as well as any required evidence of closure of the mitigation plan. Proposed completion date: December 31, 2011.

D.2 Provide the date by which full implementation of the Mitigation Plan will be, or has been, completed with respect to the Alleged or Confirmed violations identified above. State whether the Mitigation Plan has been fully implemented:

* 12/31/2011

D.3 Enter Milestone Activities, with due dates, that your organization is proposing, or has completed, for this Mitigation Plan:

Milestone	Status	Due Date	Completed Date
Report to SERC on status of Cascade implementation	Milestone Pending	3/31/2011	Detail
Report to SERC on status of Cascade implementation	Milestone Pending	6/30/2011	Detail
Cascade Application Development	Milestone Pending	8/31/2011	Detail
Train Personnel on Cascade	Milestone Pending	10/31/2011	Detail
Cascade Transition and Implementation	Milestone Pending	11/30/2011	Detail
Close Mitigation Plan	Milestone Pending	12/31/2011	Detail
Add New Mitigation Plan Milestone			

Section E: Interim and Future Reliability Risk

Abatement of Interim BPS Reliability Risk

E.1 While your organization is implementing this Mitigation Plan the reliability of the Bulk Power System (BPS) may remain at higher risk or be otherwise negatively impacted until the plan is successfully completed. To the extent they are, or may be, known or anticipated: (i) identify any such risks or impacts; and (ii) discuss any actions that your organization is planning to take to mitigate this increased risk to the reliability of the BPS.

Additional detailed information may be provided as an attachment:

Accurate facility ratings are necessary to plan and operate the system, but LG&E/KU's Facility Rating Program addressed and included the correct data once the on-site engineering

modifications were identified.

* While this Mitigation Plan is being implemented, there is a small risk of a repeat of the failure to update the LG&E/KU Facility Rating Program as specified, particularly given that human intervention is necessary to make the required updates. However, the steps identified herein that have already been taken by LG&E/KU greatly minimize the risk of any failure to update the FRP. LG&E/KU personnel already have a high degree of awareness of the relevant issues. The additional steps to be completed in connection with this Mitigation Plan simply provide a stronger reinforcement of the awareness that already exists and implementation of the Cascade Asset Management System will further minimize opportunities for failure. Accordingly, any risk to the Bulk Electric System during the implementation of the Mitigation Plan is small.

Prevention of Future BPS Reliability Risk

E.2 Describe how successful completion of this Mitigation Plan will prevent or minimize the probability that your organization incurs further risk of Alleged violations of the same or similar reliability standards requirements in the future.

Additional detailed information may be provided as an attachment:

* The implementation of the Cascade Asset Management System will allow communication between databases and initiate the necessary evaluations of changes to Facility Ratings.

Section F: Authorization

An authorized individual must sign and date this Mitigation Plan Submittal Form. By doing so, this individual, on behalf of your organization:

- a) Submits this Mitigation Plan for acceptance by **SERC** and approval by NERC, and
- b) If applicable, certifies that this Mitigation Plan was completed on or before the date provided as the 'Date of Completion of the Mitigation Plan' on this form, and
- c) Acknowledges:
 - 1. I am **John Voyles of LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**
 - 2. I am qualified to sign this Mitigation Plan on behalf of **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**
 - 3. I understand **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company's** obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4(C) (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))
 - 4. I have read and am familiar with the contents of this Mitigation Plan
 - 5. **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company** agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by **SERC** and approved by NERC

Authorized Signatory John Voyles notified on 1/25/2011

Authorized Individual Signature [Sign](#)

Section G: Regional Entity Contact

Please direct any questions regarding completion of this form to:

John Wolfmeyer
SERC Compliance Engineer
SERC Reliability Corporation
704-940-8216
jwolfmeyer@serc1.org

 [Save Item](#) |  [Delete Item](#) | [Cancel Changes](#) |  [Save PDF](#) | [Return To Search Results](#)

Logged in as:

Edwin Staton

Log Out

Edit

Save PDF | Return to Mitigation Plan

* Required Fields

Status: Saved

All Mitigation Plan Completion Certification submittals shall include data or information sufficient for SERC to verify completion of the Mitigation Plan. SERC may request such additional data or information and conduct follow-up assessments, on-site or other Spot Checking, or Compliance Audits as it deems necessary to verify that all required actions in the Mitigation Plan have been completed and the Registered Entity is in compliance with the subject Reliability Standard. (CMEP Section 6.6) Data or information submitted may become part of a public record upon final disposition of the possible violation, therefore any confidential information contained therein should be marked as such in accordance with the provisions of Section 1500 of the NERC Rules of Procedure.

Name of Registered Entity submitting certification: **LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company**

Date of Certification: 01/03/2012

Name of Standard of mitigation violation(s): FAC-009-1

Mitigated information:

Requirement	Tracking Number	Violation ID
R1.	SERC2010-400715	SERC201000607

Date of completion of the Mitigation Plan:

12/29/2011

Summary of all actions described in Part D of the releveant mitigation plan:

LGE/KU modified its "common clearance" software to indicate whether an outage had a ratings impact. The request is evaluated before the outage is scheduled.

LGE/KU also modified its existing process for updating its Facilities Rating Program (FRP). The resultant is that if equipment being added or modified is an upgrade the data is entered within seven business days. If the equipment being added or modified is a de-rate, this information is to be communicated to the Transmission Control center immediately.

Plans were then made to replace FRP with Cascade.

A report was submitted to SERC on the status of the Cascade Implementation on 3/30/2011. This was Milestone #1.

A second report was submitted to SERC on the status of the Cascade Implementation 6/16/2011. This was Milestone #2.

The Cascade Implementation team continued to work with the vendor (Digital Inspections) on the project and the Cascade program was delivered to LGE/KU and installed on July 15, 2011. The LOAD module was delivered and installed on August 26, 2011. Milestone #3.

In the process of the development of Cascade, users were identified to receive various levels of training depending upon their job function. Training of appropriate personnel was completed on October 31, 2011. The criticality of entering the data into Cascade in a timely and accurate manner were emphasized to all personnel trained. Milestone # 4

Cascade and Load were placed into testing mode. Cascade rollout began on October 10, 2011. It was implemented in various areas over time. Cascade rollout was completed by November 2, 2011. The Load module is still in testing mode. Milestone #5.

Description of the information provided to SERC for their evaluation:

--

I certify that the mitigation plan for the above-named violation has been completed on the date shown above. In doing so, I certify that all required mitigation plan actions described in Part D of the relevant mitigation plan have been completed, compliance has been restored, the above-named entity is currently compliant with all of the requirements of the referenced standard, and that all information submitted is complete and correct to the best of my knowledge. Submit all supporting documentation.

Authorized Signatory Edwin Staton notified on 12/29/2011

Signed By Edwin Staton on 1/3/2012

Attachment e

Notice of Filing

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

LG&E and KU Services Company as agent for
Louisville Gas and Electric Company and
Kentucky Utilities Company

Docket No. NP12-____-000

NOTICE OF FILING
June 29, 2012

Take notice that on June 29, 2012, the North American Electric Reliability Corporation (NERC) filed a Notice of Penalty regarding LG&E and KU Services Company as agent for Louisville Gas and Electric Company and Kentucky Utilities Company in the SERC Reliability Corporation region.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. Such notices, motions, or protests must be filed on or before the comment date. On or before the comment date, it is not necessary to serve motions to intervene or protests on persons other than the Applicant.

The Commission encourages electronic submission of protests and interventions in lieu of paper using the "eFiling" link at <http://www.ferc.gov>. Persons unable to file electronically should submit an original and 14 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426.

This filing is accessible on-line at <http://www.ferc.gov>, using the "eLibrary" link and is available for review in the Commission's Public Reference Room in Washington, D.C. There is an "eSubscription" link on the web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email FERCOnlineSupport@ferc.gov, or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

Comment Date: [BLANK]

Kimberly D. Bose,
Secretary