



NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

December 22, 2010

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

**Re: NERC Abbreviated Notice of Penalty regarding PPL Brunner Island, LLC, Lower Mount Bethel Energy, LLC, PPL Holtwood, LLC, PPL Martins Creek, LLC, and PPL Montour, LLC  
FERC Docket No. NP11-\_\_-000**

Dear Ms. Bose:

The North American Electric Reliability Corporation (NERC) hereby provides this Abbreviated Notice of Penalty (NOP) regarding PPL Brunner Island, LLC (Brunner Island), Lower Mount Bethel Energy, LLC (LMBE),<sup>1</sup> PPL Holtwood, LLC (Holtwood), PPL Martins Creek, LLC (Martins Creek), and PPL Montour, LLC (Montour),<sup>2</sup> with information and details regarding the nature and resolution of the violations<sup>3</sup> discussed in detail in the Settlement Agreement (Attachment a) and the Disposition Document (Attachment b), 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)).<sup>4</sup>

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<sup>1</sup> Lower Mount Bethel Energy, LLC is registered on the NERC Compliance Registry as PPL - Lower Mount Bethel Energy, LLC.

<sup>2</sup> PPL Generation, which is itself an indirect subsidiary of PPL Corporation, has as subsidiaries, among others, the facilities that are the subject of the instant enforcement action. PPL Generation refers to these five subsidiaries as the "Eastern Fossil & Hydro (EFH) Plants" (hereinafter referred to as the "EFH Plants").

<sup>3</sup> For purposes of this document, each violation at issue is described as a "violation," regardless of its procedural posture and whether it was a possible, alleged or confirmed violation.

<sup>4</sup> *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 (2010). *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).

## NERC Notice of Penalty

PPL Brunner Island, LLC, Lower Mount Bethel Energy, LLC, PPL Holtwood, LLC, PPL Martins Creek, LLC, and PPL Montour, LLC

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This NOP is being filed with the Commission because ReliabilityFirst Corporation (ReliabilityFirst) and the EFH Plants have entered into a Settlement Agreement to resolve all outstanding issues arising from ReliabilityFirst's determination and findings of the enforceable violations of PRC-005-1 Requirement (R) 2. According to the Settlement Agreement, the EFH Plants neither admit nor deny the violations, but have agreed to the assessed penalty of twenty five thousand dollars (\$25,000) collectively, 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 RFC200900158, RFC200900159, RFC200900160, RFC200900161 and RFC200900162 are being filed in accordance with the NERC Rules of Procedure and the CMEP.

### Statement of Findings Underlying the Violations

This NOP incorporates the findings and justifications set forth in the Settlement Agreement executed on July 29, 2010, by and between ReliabilityFirst and the EFH Plants. The details of the findings and the basis for the penalty are set forth in the Disposition Document. This NOP 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, NERC provides the following summary table identifying each violation of a Reliability Standard resolved by the Settlement Agreement, as discussed in greater detail below.

NOC ID	Registered Entity	NERC Violation ID	Reliability Std.	Req. (R)	VRF	Duration	Total Penalty (\$)
NOC-633	Brunner Island	RFC200900158	PRC-005-1	R2	High <sup>5</sup>	6/18/07-12/15/09	25,000 <sup>6</sup>
	LMBE	RFC200900159					
	Holtwood	RFC200900160					
	Martins Creek	RFC200900161					
	Montour	RFC200900162					

The text of the Reliability Standard at issue and further information on the subject violations are set forth in the Disposition Document.

### PRC-005-1 R2 - OVERVIEW

On July 22, 2009, PPL Generation, on behalf of the EFH Plants, submitted a Self-Report to ReliabilityFirst identifying non-compliance with PRC-005-1 R2, specifically R2.1. ReliabilityFirst determined that the EFH Plants, as Generator Owners, failed to test and maintain certain batteries within the intervals defined in their respective programs.

<sup>5</sup> PRC-005-1 R2 has a "Lower" VRF; PRC-R2.1 and R2.2 each have a "High" VRF. In the context of this case, ReliabilityFirst determined that the violations related to R2.1, and therefore a "High" VRF is appropriate.

<sup>6</sup> Each of the EFH Plants is jointly and severally liable for payment of this monetary penalty.

## Statement Describing the Assessed Penalty, Sanction or Enforcement Action Imposed<sup>7</sup>

### Basis for Determination

Taking into consideration the Commission's direction in Order No. 693, the NERC Sanction Guidelines, the Commission's July 3, 2008, October 26, 2009 and August 27, 2010 Guidance Orders,<sup>8</sup> the NERC BOTCC reviewed the Settlement Agreement and supporting documentation on November 2, 2010. The NERC BOTCC approved the Settlement Agreement, including ReliabilityFirst's assessment of a twenty five thousand dollars (\$25,000) financial penalty against the EFH Plants collectively 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 Standard and the underlying facts and circumstances of the violations at issue.

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

1. PPL Generation, on behalf of the EFH Plants, self-reported the violations;
2. ReliabilityFirst reported that PPL Generation, on behalf of the EFH Plants, was cooperative throughout the compliance enforcement process;
3. the EFH Plants had a compliance program at the time of the violation which ReliabilityFirst considered a mitigating factor, as discussed in the Disposition Document,
4. there was no evidence of any attempt to conceal a violation nor evidence of intent to do so;
5. ReliabilityFirst determined that the violations did not pose a serious or substantial risk to the reliability of the bulk power system (BPS), as discussed in the Disposition Document; and
6. ReliabilityFirst 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 approves the Settlement Agreement and believes that the assessed penalty of twenty five thousand dollars (\$25,000) 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 NOP with FERC, or, if FERC decides to review the penalty, upon final determination by FERC.

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<sup>7</sup> See 18 C.F.R. § 39.7(d)(4).

<sup>8</sup> *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).

**Attachments to be included as Part of this Notice of Penalty**

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

- a) Settlement Agreement by and between Reliability*First* and the EFH Plants executed July 29, 2010, included as Attachment b with attachments:
  - i. PPL Generation's Self-Report dated July 22, 2009, included as Attachment A to the Settlement Agreement;
  - ii. PPL Generation's Mitigation Plan MIT-07-2139 submitted November 12, 2009, Attachment B to the Settlement Agreement;
  - iii. PPL Generation's Certification of Mitigation Plan Completion dated December 15, 2009, included as Attachment C to the Settlement Agreement; and
  - iv. Reliability*First*'s Verification of Mitigation Plan Completion dated July 29, 2010, included as Attachment D to the Settlement Agreement.
- b) Disposition Document, included as Attachment b.

**A Form of Notice Suitable for Publication<sup>9</sup>**

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

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<sup>9</sup> See 18 C.F.R. § 39.7(d)(6).

### 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 David N. Cook* Sr. Vice President and General Counsel North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, NJ 08540-5721 (609) 452-8060 (609) 452-9550 – facsimile david.cook@nerc.net</p> <p>Dennis J. Murphy* Vice President and Chief Operating Officer Lower Mount Bethel Energy, LLC PPL Brunner Island, LLC PPL Holtwood, LLC PPL Martins Creeks, LLC PPL Montour, LLC Two North Ninth Street Allentown, Pennsylvania 18101 (610) 774-4316 djmurphy@pplweb.com</p> <p>Robert G. Grassi* Senior Counsel PPL Corporation Two North Ninth Street Allentown, Pennsylvania 18101 (610)774-2907 rggrassi@pplweb.com</p> <p>*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.</p>	<p>Rebecca J. Michael* Assistant General Counsel North American Electric Reliability Corporation 1120 G Street, N.W. Suite 990 Washington, DC 20005-3801 (202) 393-3998 (202) 393-3955 – facsimile rebecca.michael@nerc.net</p> <p>Robert K. Wargo* Manager of Compliance Enforcement ReliabilityFirst Corporation 320 Springside Drive, Suite 300 Akron, OH 44333 (330) 456-2488 bob.wargo@rfirst.org</p> <p>L. Jason Blake* Attorney ReliabilityFirst Corporation 320 Springside Drive, Suite 300 Akron, OH 44333 (330) 456-2488 jason.blake@rfirst.org</p> <p>Michael D. Austin* Associate Attorney 320 Springside Drive, Suite 300 Akron, OH 44333 (330) 456-2488 mike.austin@rfirst.org</p>
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## Conclusion

Accordingly, NERC respectfully requests that the Commission accept this Abbreviated NOP as compliant with its rules, regulations and orders.

Respectfully submitted,

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cc: PPL Brunner Island, L.L.C.  
Lower Mount Bethel Energy, LLC  
PPL Holtwood, L.L.C.  
PPL Martins Creek, L.L.C.  
PPL Montour, L.L.C.  
ReliabilityFirst Corporation

Attachments

## **Attachment a**

# **Settlement Agreement by and between ReliabilityFirst and the EFH Plants executed July 29, 2010**




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<b>In re: LOWER MOUNT</b>	)	<b>Docket Nos. RFC200900158;</b>
<b>BETHEL ENERGY, LLC</b>	)	<b>RFC200900159;</b>
	)	<b>RFC200900160;</b>
<i>and</i>	)	<b>RFC200900161; and</b>
	)	<b>RFC200900162</b>
<b>PPL BRUNNER ISLAND, LLC</b>	)	
	)	
<i>and</i>	)	
	)	
<b>PPL HOLTWOOD, LLC</b>	)	
	)	
<i>and</i>	)	
	)	
<b>PPL MARTINS CREEK, LLC</b>	)	
	)	
<i>and</i>	)	
	)	
<b>PPL MONTOUR, LLC</b>	)	
	)	
NERC Registry ID Nos.	)	NERC Reliability Standard:
NCR00882; NCR00883; NCR00886;	)	PRC-005-1, Requirement 2
NCR00887; and NCR00888	)	

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**SETTLEMENT AGREEMENT  
AMONG  
RELIABILITYFIRST CORPORATION,  
LOWER MOUNT BETHEL ENERGY, LLC, PPL BRUNNER ISLAND, LLC,  
PPL HOLTWOOD, LLC, PPL MARTINS CREEK, LLC, and  
PPL MONTOUR, LLC**

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**I. INTRODUCTION**

1. Five PPL Generation, LLC (“PPL Generation”) subsidiaries, Lower Mount Bethel Energy, LLC (“LMBE”)<sup>1</sup>, PPL Brunner Island, LLC (“Brunner Island”), PPL

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<sup>1</sup> Listed in the NERC Registry as “PPL-Lower Mount Bethel Energy, LLC.”

Holtwood, LLC (“Holtwood”), PPL Martins Creek, LLC (“Martins Creek”), and PPL Montour, LLC (“Montour”),<sup>2</sup> enter into this Settlement Agreement (“Agreement”) with ReliabilityFirst Corporation (“ReliabilityFirst”) to resolve all outstanding issues arising from a Violation Self-Reporting Form (the “Self-Report”) (attached as **Attachment A**) submitted by the EFH Plants and an assessment resulting in ReliabilityFirst’s determination and findings, pursuant to the North American Electric Reliability Corporation (“NERC”) Rules of Procedure, of alleged violations by the EFH Plants of NERC Reliability Standard PRC-005-1, Requirement 2.

## II. STIPULATION OF FACTS

2. The facts stipulated herein are stipulated solely for the purpose of resolving among the EFH Plants and ReliabilityFirst the matters discussed herein and do not constitute admissions or stipulations for any other purpose. The EFH Plants neither admit nor deny that the facts stipulated herein constitute violations of PRC-005-1, R2.

### A. Background.

3. The EFH Plants are subsidiaries of PPL Generation, which is itself an indirect subsidiary of PPL Corporation. The facilities owned and operated by the EFH Plants that meet the NERC registry criteria are as follows: LMBE is a combined cycle plant and consists of two natural gas fired generating units and a heat recovery steam unit with a total generating capacity of approximately 551.2 megawatts (“MW”); Brunner Island consists of three coal fired generating units with a total generating capacity of approximately 1,442 MW; Holtwood consists of 10 hydroelectric generators with a total generating capacity of approximately 110.5 MW; Martins Creek consists of two oil and/or natural gas fired generating units and four Combustion Turbine Generators with a total generating capacity of approximately 1702 MW; and Montour consists of two coal fired generating units with a total generating capacity of approximately 1,515 MW.
4. Brunner Island, Holtwood, LMBE, Martins Creek, and Montour are each registered as a Generator Owner, Generator Operator, and Purchasing Selling Entity. The captioned alleged violations are applicable to each of the EFH Plants in their respective capacities as Generator Owners.

### B. Alleged Violations of PRC-005-1, R2.

5. PRC-005-1, R2, states:

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its

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<sup>2</sup> PPL Generation refers to these five subsidiaries as the “Eastern Fossil & Hydro (EFH) Plants.”

Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

6. On July 22, 2009, PPL Generation, on behalf of the EFH Plants, submitted the Self-Report to ReliabilityFirst identifying a possible non-compliance to NERC Reliability Standard PRC-005-1, R2.1.
7. According to the Self-Report, the EFH Plants had in place battery testing and maintenance plans but in some instances the battery tests were not conducted as frequently as indicated in the respective plans, and the plans did not document a test deferral option. Specifically, PPL Generation had promulgated guidelines for battery testing and maintenance for the EFH Plants, contained in Eastern Fossil Hydro Instructions (“EFHI”) 4.201. Each of the EFH Plants had developed individual, plant-specific battery testing and maintenance programs to implement the guidelines contained in EFHI 4.201.
8. In particular, EFHI 4.201, Revision 3 provided the guidelines to properly maintain all lead-acid battery systems. EFHI 4.201 sets maintenance and testing intervals and describes their basis for station batteries at the EFH Plants. Each EFH Plant then establishes a plant-specific maintenance and testing program to implement EFHI 4.201. The alleged violations addressed herein arose because the EFH Plants failed to test and maintain batteries within the intervals defined in EFHI 4.201.
9. ReliabilityFirst alleges that each of the EFH Plants violated PRC-005-1, R2 by failing to test batteries within the intervals established by EFHI 4.201. Each alleged violation is discussed in greater detail below.
  - i. *Brunner Island—RFC200900158*
10. EFHI 4.201 requires monthly specific gravity and voltage (“SG&V”) and temperature testing of battery pilot cells. Pilot cells are 10% of the total cells in the battery. Brunner Island’s plant-specific program required SG&V and temperature testing of all battery cells on only a quarterly basis. Therefore, Brunner Island performed these specific battery tests on 100% of the batteries on a quarterly basis rather than on just 10% on a monthly basis as required by EFHI 4.201.
11. The Brunner Island plant-specific program also required testing of battery connections on a quarterly basis. Brunner Island performed five of eight quarterly

tests from June 2007 to July 2009. In 2007, Brunner Island performed testing in the second and third quarters, but did not perform this test in the fourth quarter of 2007. Additionally, in 2008, Brunner Island performed these tests only twice rather than in each quarter. Brunner Island was performing other general battery checks as part of its operators' daily rounds.

12. This alleged violation affected all five batteries within the scope of PRC-005 owned by Brunner Island. In total, Brunner Island owns or operates 717 Protection System devices.

*ii. LMBE—RFC200900159*

13. Both EFHI 4.201 and the LMBE plant-specific program required monthly inspections of battery charger voltage, SG&V testing of pilot cells, electrolyte level inspections, and sample temperature testing. LMBE missed one of these monthly tests in August 2007. LMBE was performing other general battery checks as part of its operators' daily rounds.

14. This alleged violation affected two of four batteries within the scope of PRC-005 owned by LMBE. In total, LMBE owns or operates 172 Protection System devices.

*iii. Holtwood—RFC200900160*

15. EFHI 4.201 requires monthly SG&V and temperature testing of pilot cells. The Holtwood plant-specific program, however, required only semi-annual SG&V and temperature testing of all battery cells. Therefore, Holtwood did not perform monthly SG&V and temperatures testing of pilot cells. EFHI also required annual inspection of connections and ambient temperature testing, which Holtwood performed twice per year, starting in 2008. Holtwood did not perform this inspection in 2007. Holtwood was performing other general battery checks as part of its operators' rounds.

16. This alleged violation affected the only battery within the scope of PRC-005 owned by Holtwood. In total Holtwood owns or operates 528 Protection System devices.

*iv. Martins Creek—RFC200900161*

17. Martins Creek includes two oil and/or gas fired steam generating units and four gas turbines ("CTGs") that meet the NERC registry criteria. EFHI 4.201 requires monthly inspections of charger voltage, SG&V testing of pilot cells, electrolyte level inspections, and sample temperature testing for lead acid batteries. Martins Creek has a total of three batteries within the scope of PRC-005 for the steam plant and the CTGs. Martins Creek deferred these monthly tests for the batteries as follows: two months in 2007 and four months in 2008 for Protection System battery 1; two months in 2007 and five months in 2008 for Protection System battery 2; and three months in 2007 and four months in 2008 for Protection

System battery 3. Martins Creek performs charger voltage checks, electrolyte level inspections, and visual inspections during daily operator rounds.

18. EFHI 4.201 versions in effect during the relevant period provided guidelines for only lead-acid batteries, which are used at other EFH Plants. However, Martins Creek replaced one Protection System lead acid battery with a valve regulated lead acid (“VRLA”) battery in the fourth quarter of 2008 at the CTGs. EFHI 4.201 included a requirement to perform specific gravity checks for pilot cells monthly and for all cells of the battery annually. This monthly check was not done as required for the original lead acid batteries. This check is not applicable to the current VRLA batteries and therefore was not included in the current Martins Creek’s plant-specific program. Martins Creek performs charger voltage checks, electrolyte level inspections, and visual inspections during daily operator rounds.
19. This alleged violation affected all three batteries in the scope of PRC-005 for the steam plant and the CTGs owned by Martins Creek. In total, Martins Creek owns or operates 473 Protection System devices.

v. *Montour—RFC200900162*

20. EFHI 4.201 required monthly SG&V and temperature testing of pilot cells, which Montour did not perform. Pilot cells are 10% of the total cells in the battery. Instead, the Montour Program required quarterly SG&V and temperature testing of all battery cells, including pilot cells. Montour, however, only performed these tests two times in 2008. Other monthly activities noted in EFHI 4.201 were included in daily operator rounds.
21. This alleged violation affected all four batteries in the scope of PRC-005 owned by Montour. In total, Montour owns or operates 297 Protection System devices.

### **III. RISK CONSIDERATIONS AND COMPLIANCE CULTURE**

#### **A. Risk Considerations for PRC-005-1, R2.**

22. ReliabilityFirst determined that the facts and circumstances implicated sub-requirement 2.1 of PRC-005-1, R2, which has a VRF of “High.” Therefore, for purposes of evaluating the range of monetary penalties related to the Alleged Violations, ReliabilityFirst used a VRF of “High.” Applying the Violation Severity Level (“VSL”) Matrix to the facts underlying the Alleged Violation, ReliabilityFirst assigned a VSL of “Lower” to each of the Alleged Violations.
23. The duration of this alleged violation is from June 18, 2007, the date on which the EFH Plants were required to comply with PRC-005-1, R2 through December 15, 2009, the date that PPL Generation, on behalf of the EFH Plants, completed the actions in the mitigation plan (defined below).

24. The reliability impact of the missed battery tests discussed herein was minimal, and there were no battery failures associated with these missed battery tests. The EFH Plant batteries are continuously monitored in the EFH Plants' control rooms via a summary alarm system that includes ground alarms. In addition, the EFH Plant maintenance practices include daily or weekly visual inspections of battery conditions. Each of the individual EFH Plants' programs for battery testing and maintenance exceeds the suggested battery monitoring and testing bases identified in NERC's "Protection System Maintenance, A Technical Reference," dated September 13, 2007.

#### **B. Culture of Compliance.**

25. The EFH Plants are indirect subsidiaries of PPL Corporation. PPL Corporation developed and implemented the PPL NERC Compliance Program designed to ensure that all its subsidiaries comply with NERC Reliability Standards. *ReliabilityFirst* commends certain aspects of this program. For instance, this program is made available to PPL Corporation and subsidiary employees through a variety of channels.
26. Furthermore, PPL Corporation's senior management team supports and participates in NERC Reliability Standard compliance matters. Members of PPL Corporation management participate in an internal Compliance Oversight Group, which meets regularly to address compliance-related matters. On a periodic basis, these meetings include sessions to discuss NERC-related compliance matters with the Senior Director – NERC Compliance and other personnel responsible for NERC compliance. Members of the Compliance Oversight Group include PPL Corporation's Senior Director of Business Ethics/Compliance, the Executive Director of Corporate Audit Services, and the Chief Compliance Officer. The Senior Vice President, General Counsel and Secretary of PPL Corporation is the Chief Compliance Officer and has a direct line of communication with PPL Corporation's Chief Executive Officer.
27. *ReliabilityFirst* also commends PPL Generation, acting on behalf of the EFH Plants, for filing the Self-Report and for cooperating with *ReliabilityFirst* throughout the enforcement process related to the alleged violations.

### **IV. MITIGATING ACTIONS, REMEDIES, AND SANCTIONS**

#### **A. Mitigating Actions for PRC-005-1, R2.**

28. On November 12, 2009, PPL Generation, on behalf of the EFH Plants, and after conferring with RFC, submitted to *ReliabilityFirst* the mitigation plan ("Mitigation Plan") addressing the alleged violations. *See*, NERC Mitigation Plan ID No. MIT-07-2319, PPL Generation Mitigation Plan (attached as **Attachment B**). *ReliabilityFirst* accepted the Mitigation Plan on November 16, 2009, and submitted the accepted Mitigation Plan to NERC for approval on November 19, 2009. NERC approved the Mitigation Plan on December 4, 2009 and, on this

same date, submitted the Mitigation Plan to the Federal Energy Regulatory Commission (the “Commission”) as confidential, non-public information.

29. On December 15, 2009, PPL Generation, on behalf of the EFH Plants, submitted to ReliabilityFirst a certification of completion of the Mitigation Plan and evidence in support of this certification, which stated that the Mitigation Plan was completed as of December 15, 2009. See, Certification of Mitigation Plan Completion (attached as **Attachment C**).

30. In the Mitigation Plan, PPL Generation proposed the following actions (identified below as items *i. – v.*), some of which were started prior to submittal of the Mitigation Plan, in order to effectuate strict compliance to PRC-005-1, R2.

*i. Training and Communication*

31. EFH Plant management discussed the details of each plant’s failure to meet all of the battery testing intervals with appropriate personnel. Management sought to emphasize the need for strict adherence to testing and maintenance programs for equipment important to the reliability of the Bulk Electric System (“BES”). EFH Plant management also directed plant personnel to perform all battery testing and maintenance activities for NERC equipment in accordance with current written plant procedures. The PPL Generation Compliance Committee members also discussed this event to share lessons learned across the PPL Generation fleet. These work group discussions also emphasized the importance of performing routine testing and maintenance activities for equipment important to the reliability of the BES.

32. PPL Generation, on behalf of the EFH Plants, developed a NERC awareness video to be presented to applicable employees. The deployment of this training was completed for the EFH Plants by September 30, 2009. This training emphasized the importance of performing routine testing and maintenance activities for equipment important to the reliability of the BES.

*ii. Procedure Change*

33. PPL Generation issued a change to the battery testing and maintenance procedure, EFHI 4.201, Revision 4, to document a previously unwritten policy allowing Work Management Supervisors to exercise their judgment and defer only one cycle of periodic battery tests based upon the results in recent monitoring and maintenance records. This change recognizes that routine testing activities can be deferred by one cycle without adverse impact to the reliability of the equipment and ensures that the EFH Plants are performing maintenance and testing pursuant to a defined program.

*iii. Root Cause Analysis*

34. PPL Generation performed a root cause analysis to determine why EFH Plants’ battery maintenance programs deviated from EFHI 4.201. This root cause

analysis determined that the alleged violations stemmed from confusion regarding whether EFHI 4.201 was a guidance document or a mandatory protection system maintenance and testing program. The root cause analysis also identified the need to coordinate EFHI 4.201 with the individual EFH Plants and the need to develop an internal audit process to monitor compliance with EFHI 4.201.

*iv. Equipment Identification Change*

35. PPL Generation enhanced its work management system to clearly identify work orders related to battery maintenance for compliance with PRC-005-1. Batteries within the scope of PRC-005 will now be identified in the work management system in order to notify personnel that testing and maintenance activities associated with the equipment have a high priority and may require additional documentation to ensure that the EFH Plants can show compliance with PRC-005-1.

*v. New Procedure*

36. The EFH Plants added a new category of EFHI procedures to highlight NERC and Regional Entity compliance related items. The first instruction issued in this category is a separate procedure specifically addressing battery testing and maintenance activities for batteries covered by NERC Reliability Standard PRC-005-1 and specifically listing each battery set within the scope of PRC-005. The strategy reflected in the revised procedure meets or exceeds the guidance provided in NERC's "Protection System Maintenance, A Technical Reference," dated September 13, 2007.
37. Procedural changes will ensure that each of the responsible Registered Entities is working to an approved testing and maintenance program that allows judgment to defer routine activities based on equipment condition. Training on this new procedure will emphasize to personnel the importance of following testing and maintenance programs and preparing adequate documentation to demonstrate compliance. The changes to the work management system will aid personnel in identifying the required work for equipment covered by NERC Standard PRC-005-1.
38. ReliabilityFirst analyzed the following evidence to confirm completion of the Mitigation Plan:
- *Meeting Agendas*: PPL Generation held meetings to discuss battery testing at the EFH Plants and lessons learned from the facts included herein. PPL Generation then prepared a NERC awareness training video that was presented to employees of the EFH Plants and other PPL Generation employees.
  - *Eastern Fossil & Hydro Instruction EFHI 4.201, Revision 4, Maintenance of Station Battery Systems*: This revision to EFHI 4.201

documents authority for EFH Plant personnel to defer periodic battery tests for one test cycle.

- *Root Cause Analysis*: This analysis reached conclusions regarding the deviations between the instructions in EFHI 4.201 and the EFH Plants' implementation of EFHI 4.201. It also included several recommended actions, all of which were taken by PPL Generation acting on behalf of the EFH Plants.
- *Maintenance of NERC Station Battery Systems EFHI 10.04.01, Revision 0*: This new procedure provides additional instructions relating to batteries within the scope of PRC-005. It ensures that PPL Generation maintains compliance and the documentation required to demonstrate as such.
- *Battery Testing Records*: PPL Generation provided evidence that all EFH Plant batteries have been tested within their defined intervals.

39. ReliabilityFirst reviewed the evidence PPL Generation submitted in support of its certification of completion of the Mitigation Plan. On July 29, 2010, ReliabilityFirst verified that PPL Generation, on behalf of the EFH Plants, completed the Mitigation Plan in accordance with its terms. *See*, Summary and Review of Evidence of Mitigation Plan Completion (attached as **Attachment D**).

**B. Monetary Penalty.**

40. The EFH Plants shall pay a total monetary penalty of \$25,000 to ReliabilityFirst. Each of the EFH Plants shall be jointly and severally liable for payment of this monetary penalty.
41. ReliabilityFirst shall present a \$25,000 invoice to the EFH Plants within 20 days after this Agreement is approved by the Commission or affirmed by operation of law. Upon receipt, the EFH Plants shall have 30 days to remit payment.
42. If the EFH Plants fail to timely remit the \$25,000 monetary penalty payment to ReliabilityFirst, interest will commence to accrue on the outstanding balance, pursuant to 18 C.F.R. § 35.19 (a)(2)(iii), on the earlier of (a) the 31<sup>st</sup> day after the date on the invoice issued by ReliabilityFirst to the EFH Plants for the \$25,000 monetary penalty payment or (b) the 51<sup>st</sup> day after this Agreement is approved by the Commission or affirmed by operation of law.
43. ReliabilityFirst may deem the failure of the EFH Plants to timely remit the \$25,000 payment as either the same alleged violations identified in this Agreement or additional violation(s) or both, and, if so deemed, the EFH Plants will be subject to new or additional enforcement, penalty, or sanction actions in accordance with the NERC Rules of Procedure. The EFH Plants shall retain all

rights to defend against such additional actions in accordance with the NERC Rules of Procedure.

## V. ADDITIONAL TERMS

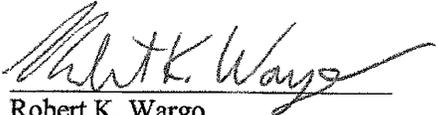
44. ReliabilityFirst and the EFH Plants agree that this Agreement is the best interest of BES reliability.
45. The terms and conditions of this Agreement are consistent with the regulations and orders of the Commission and the NERC Rules of Procedure.
46. ReliabilityFirst shall report the terms of all settlements of compliance matters to NERC. NERC will review this Agreement for the purpose of evaluating its consistency with other settlements entered into for similar violations or under similar circumstances. Based on this review, NERC will either approve or reject this Agreement. If NERC rejects this Agreement, NERC will provide specific written reasons for such rejection and ReliabilityFirst will attempt to negotiate with the EFH Plants a revised settlement agreement that addresses NERC's concerns. If a settlement cannot be reached, the enforcement process shall continue to conclusion. If NERC approves this Agreement, NERC will (a) report the approved settlement to the Commission for review and approval by order or operation of law and (b) publicly post the alleged violations and the terms provided for in this Agreement.
47. This Agreement shall become effective upon the Commission's approval of this Agreement by order or affirmation by operation of law or as modified in a manner acceptable to the parties.
48. The EFH Plants agree that this Agreement, when approved by NERC and the Commission, shall represent a final settlement of all matters set forth herein and binds the EFH Plants to perform the actions enumerated herein. The EFH Plants expressly waive their right to any hearing or appeal concerning any matter set forth herein, unless and only to the extent that the EFH Plants contend that any NERC or Commission action constitutes a material modification to this Agreement.
49. ReliabilityFirst reserves all rights to initiate enforcement actions against the EFH Plants in accordance with the NERC Rules of Procedure in the event that the EFH Plants fail to comply with any of the terms or conditions of this Agreement. In the event the EFH Plants fail to comply with any of the terms or conditions of this Agreement, ReliabilityFirst may initiate an action or actions against the EFH Plants to the maximum extent allowed by the NERC Rules of Procedure, including, but not limited to, the imposition of the maximum statutorily allowed monetary penalty. The EFH Plants will retain all rights to defend against such action or actions in accordance with the NERC Rules of Procedure.

50. The EFH Plants consent to the future use of conclusions, determinations, and findings set forth in this Agreement for the purpose of assessing the factors within the NERC Sanction Guidelines and applicable Commission orders and policy statements, including, but not limited to, the factor evaluating the history of violations of the EFH Plants. Such use may be in any enforcement action or compliance proceeding undertaken by NERC or any Regional Entity or both, provided however that the EFH Plants each do not consent to the use of the conclusions, determinations, and findings set forth in this Agreement as the sole basis for any other action or proceeding brought by NERC or any Regional Entity, or both, nor consent to the use of this Agreement by any other party in any other action or proceeding.
51. The undersigned representative of each party affirms he or she has read this Agreement, that all of the matters set forth in this Agreement are true and correct to the best of his or her knowledge, information, and belief, and that he or she understands that this Agreement is entered into in express reliance on the representations contained herein.
52. Each of the undersigned warrants that he or she is an authorized representative of the entity designated below, is authorized to bind such entity, and accepts this Agreement on the entity's behalf.
53. The signatories to this Agreement agree that they enter into this 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 ReliabilityFirst or the EFH Plants has been made to induce the signatories or any other party to enter into this Agreement.
54. This Agreement may be signed in counterparts.
55. This Agreement is executed in duplicate, each of which so executed shall be deemed to be an original.

**[SIGNATURE PAGE TO FOLLOW]**

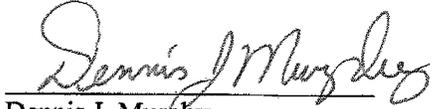
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**Agreed to and accepted:**



Robert K. Wargo  
Manager of Compliance Enforcement  
ReliabilityFirst Corporation

7/29/2010  
Date



Dennis J. Murphy  
Vice President and Chief Operating Officer  
Lower Mount Bethel Energy, LLC  
PPL Brunner Island, LLC  
PPL Holtwood, LLC  
PPL Martins Creek, LLC  
PPL Montour, LLC

07/29/2010  
Date

**Approved:**



Raymond J. Palmieri  
Vice President and Director of Compliance  
ReliabilityFirst Corporation

7/30/2010  
Date

# **Attachment A**

## Violation Self-Report

Dated July 22, 2009



**COMPLIANCE MONITORING AND ENFORCEMENT PROGRAM**  
**VIOLATION SELF-REPORTING FORM**

*This Violation Self-Reporting Form can be used for submittals via e-mail or fax for violations of the Reliability Standards identified by a self- assessment.*

1. **Reliability Standard** (XXX-###-# or XXX-###-RFC-##) PRC-005-1

2. **Violation(s):** Check the appropriate box(s) to identify violation(s) of any of the applicable requirement(s) referenced in the standard.

**For violations of requirements with Levels of Non-Compliance or Violation Severity Levels (VSL) specified in the standard:**

- Entity is Level 1 Non-Compliance or has Lower VSL for the following: requirement(s): \_\_\_\_\_ for function(s): \_\_\_\_\_
- Entity is Level 2 Non-Compliance or has Moderate VSL for the following: requirement(s): R2.1 for function(s): GO
- Entity is Level 3 Non-Compliance or has High VSL for the following: requirement(s): \_\_\_\_\_ for function(s): \_\_\_\_\_
- Entity is Level 4 Non-Compliance or has Severe VSL for the following: requirement(s): \_\_\_\_\_ for function(s): \_\_\_\_\_

**For violations of requirements with no Levels of Non-Compliance or Violation Severity Levels specified in the standard:**

- Entity is in violation of requirement(s) not referenced in the Levels of Non-Compliance or Violation Severity Levels section of the standard:  
 requirement(s): \_\_\_\_\_ for function(s): \_\_\_\_\_

3. **Description of the violation:** PPL Brunner Island, LLC ("Brunner Island"), PPL Holtwood, LLC ("Holtwood"), PPL Lower Mount Bethel Energy, LLC ("LMBE"), PPL Martins Creek, LLC ("Martins Creek"), and PPL Montour, LLC ("Montour") (collectively, the "PPL Eastern Fossil & Hydro (EFH") plants") each are registered Generation Owners ("GO"). PPL Generation, LLC ("PPL Generation") is their upstream owner. PPL Generation has identified a potential non-compliance condition for NERC Standard PRC-005-1, which requires GOs to have a Protection System maintenance and testing program in place and to maintain and test devices within the bases prescribed by the program. As described below, the EFH Plants had in place battery testing and maintenance plans but in some instances the battery tests were not conducted as frequently as indicated in the respective plans, and the plans did not document a test deferral option..

EFH had guidelines in place for battery testing and maintenance (Eastern Fossil Hydro Instruction "EFHI" 4.201) and each of the EFH plants had developed individual plant-specific battery testing and maintenance programs to implement the EFHI guidelines (such as Model Work Orders). Both EFHI 4.201 and the plant-specific programs required testing bases that were more stringent than those suggested in NERC's "Protection System Maintenance, A Technical Reference" (Sep. 13, 2007). Although not required by EFHI 4.201, the EFH Plants include battery checks in daily or weekly rounds. During rounds, operators check battery alarms, charger voltage, and general physical battery conditions. In addition to the battery testing and maintenance programs, EFH plants remotely monitor battery conditions.

Brunner Island: EFHI 4.201 required monthly specific gravity and voltage ("SG&V") and temperature testing of pilot cells. Brunner Island did not perform these monthly tasks. Instead, the Brunner Island program required SG&V and temperature testing of all battery cells on a quarterly basis. The Brunner Island program also required testing of battery connections on a quarterly

basis. In 2007, Brunner Island performed testing in the 2nd and 3rd quarters. No testing was performed in the 4th quarter of 2007. Brunner Island only performed these tests twice annually in 2008 rather than in each quarter. Other monthly activities noted in EFHI 4.201 were included in daily operator rounds.

Holtwood: EFHI 4.201 required monthly SG&V and temperature testing of pilot cells, which Holtwood did not perform. Instead, the Holtwood program required semi-annual SG&V and temperature testing of all battery cells, which Holtwood did timely perform. EFHI 4.201 also required annual inspection of connections and ambient temperature testing, which Holtwood performed twice per year, starting in 2008. Other monthly activities noted in EFHI 4.201 were included in weekly operator rounds.

LMBE: EFHI 4.201 and the LMBE program required monthly inspections of charger voltage, SG&V testing of pilot cells, electrolyte level inspections and sample temperature testing. LMBE missed one of these monthly tests in October 2007 and one in January 2009. LMBE was performing other general battery checks in daily rounds.

Martins Creek: Martins Creek includes two oil or gas-fired generating units ("Martins Creek 3/4"). EFHI 4.201 required monthly inspections of charger voltage, SG&V testing of pilot cells, electrolyte level inspections, and sample temperature testing. Martins Creek 3/4 units deferred these tests for two months in 2007 and for four months in 2008. Martins Creek performs charger voltage checks, electrolyte level inspections, and visual inspections during daily operator rounds.

Martins Creek also includes separate combustion turbine generator units (the "Martins Creek CTGs"). EFHI 4.201 revisions in effect during the relevant period provided guidelines for only lead-acid batteries used at other EFH plants. However, Martins Creek CTGs replaced the lead acid batteries with Valve Regulated Lead Acid (VRLA) batteries in the fourth quarter of 2008. EFHI 4.201 included a requirement to perform specific gravity checks for pilot cells monthly and for all cells of the battery annually. This check was not done monthly for the original lead acid batteries. This check is not applicable to the current VRLA batteries and therefore not included in the current Martins Creek CTGs' program. EFHI 4.201 required monthly inspections of charger voltage, SG&V testing of pilot cells, electrolyte level inspections, and sample temperature testing. The Martins Creek CTGs performed the monthly required tests twice between June 18, 2007 and December 31, 2007 and 8 times in 2008, rather than each month. Martins Creek CTG performs charger voltage checks, electrolyte level inspections, and visual inspections during weekly operator rounds.

Montour: EFHI 4.201 required monthly SG&V and temperature testing of pilot cells, which Montour did not perform. Instead, the Montour Program required quarterly SG&V and temperature testing of all battery cells, however, it only did these tests three times annually rather than each quarter in 2008. Other monthly activities noted in EFHI 4.201 were included in daily operator rounds.

- 
4. **Additional information:** There was no reliability impact caused by the missed battery tests and there were no battery failures associated with these missed battery tests. The EFH Plant batteries are continuously monitored in the control room via system ground alarm and metering equipment. In addition, plant maintenance practices include daily or weekly visual inspections of battery conditions. Each of the EFH plants' programs for battery testing and maintenance exceeds the suggested battery monitoring and testing bases identified in NERC's "Protection System Maintenance, A Technical Reference," dated September 13, 2007.

The primary reason that periodic battery tests were missed is that during the time covered by this self-report, EFH Plant Operators exercised discretion to defer some periodic, predictive testing activities for the battery systems, based on continuing good trends in operations and testing as well as a robust monitoring program including frequent operator inspections and continuous monitoring in the control room through system ground alarm and metering equipment. Since the EFH plant programs did not document the test deferral option, PPL Generation determined that their practice did not meet the intent of PRC-005-1 to develop and follow a documented Protection System testing and maintenance program.

5. **Mitigation Plan attached:**  Yes  No

6. **Officer Verification:** I understand that this information is being provided as required by the Reliability *First* Compliance Monitoring and Enforcement Program. Any review of this violation will require all information certified on this form be supported by appropriate documentation.

**Enter NERC Registry ID#** NCR00882, NCR00883, NCR00886, NCR00887, NCR00888

Officer's Name: Dennis J. Murphy

Officer's Title: Vice President and Chief Operating Officer

Officer's e-mail address: djmurphy@pplweb.com Phone: 610-774-4316

Registered Company Name: PPL Lower Mount Bethel Energy, LLC; PPL Brunner Island, LLC; PPL Holtwood, LLC; PPL Martins Creek, LLC; PPL Montour, LLC.

Primary Compliance Contact/Secondary: Mark Heimbach

Email: maheimbach@pplweb.com Phone: 610-774-4571 Date: July 22, 2009

**E-mail Submittals to [compliance@rfirst.org](mailto:compliance@rfirst.org) Subject Line: Violation Self-Report**  
**For any questions regarding compliance submittals, please e-mail [compliance@rfirst.org](mailto:compliance@rfirst.org).**

# **Attachment B**

Mitigation Plan (MIT-07-2319)

Dated November 12, 2009

FOR PUBLIC RELEASE - DECEMBER 22, 2010



RFC200900158  
 RFC200900159  
 RFC200900160  
 RFC200900161  
 RFC200900162

## Mitigation Plan Submittal Form

Date this Mitigation Plan is being submitted: November 12, 2009

### **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."
- A.2 This form must be used to submit required Mitigation Plans for review and acceptance by ReliabilityFirst and approval by NERC.
- A.3  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: Lower Mount Bethel Energy, LLC (registered as  
 PPL Lower Mount Bethel Energy, LLC)  
 PPL Brunner Island, LLC  
 PPL Holtwood, LLC  
 PPL Martins Creek, LLC  
 PPL Montour, LLC

Company Address: Two North Ninth Street  
 Allentown, PA 18101-1179

NERC Compliance Registry ID: NCR00882 (Lower Mount Bethel Energy)  
 NCR00883 (Brunner Island)  
 NCR00886 (Holtwood)  
 NCR00887 (Martins Creek)  
 NCR00888 (Montour)

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

Name: Joseph V. Kisela  
 Title: Engineering Support Manager  
 PPL Generation, LLC  
 Email: jvkisela@pplweb.com  
 Phone: 610-774-4405

**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.

NERC Violation ID #	Reliability Standard	Requirement Number	Violation Risk Factor	Alleged or Confirmed Violation Date <sup>(*)</sup>	Method of Detection (e.g., Audit, Self-report, Investigation)
RFC200900158	PRC-005	R2.1	High	July 22, 2009	Self-report
RFC200900159	PRC-005	R2.1	High	July 22, 2009	Self-report
RFC200900160	PRC-005	R2.1	High	July 22, 2009	Self-report
RFC200900161	PRC-005	R2.1	High	July 22, 2009	Self-report
RFC200900162	PRC-005	R2.1	High	July 22, 2009	Self-report

(\*) Note: The Alleged or Confirmed Violation Date shall be expressly specified by the Registered Entity, and subject to modification by ReliabilityFirst, as: (i) the date the Alleged or Confirmed violation occurred; (ii) the date that the Alleged or Confirmed violation was self-reported; or (iii) the date that the Alleged or Confirmed violation has been deemed to have occurred on by ReliabilityFirst. Questions regarding the date to use should be directed to the ReliabilityFirst contact identified in Section G of this form.

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

PPL Brunner Island, LLC ("Brunner Island"), PPL Holtwood, LLC ("Holtwood"), Lower Mount Bethel Energy, LLC ("LMBE"), PPL Martins Creek, LLC ("Martins Creek"), and PPL Montour, LLC ("Montour") each are registered Generation Owners ("GO") and are

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collectively referred to herein as the "Eastern Fossil & Hydro Plants" or "EFH Plants." PPL Generation, LLC ("PPL Generation") is the upstream owner of the EFH Plants and provides various services to its subsidiaries, including the EFH Plants.

PPL Generation has identified a potential violation of NERC Standard PRC-005-1, which requires GOs to have a Protection System maintenance and testing program in place and to maintain and test devices within the intervals prescribed by the program. As described below, the EFH Plants had in place battery testing and maintenance plans but in some instances the battery tests were not conducted as frequently as indicated in the respective plans, and the plans did not document a test deferral option.

PPL Generation had guidelines in place for battery testing and maintenance (Eastern Fossil Hydro Instruction "EFHI" 4.201), and each of the EFH Plants had developed individual plant-specific battery testing and maintenance programs to implement the EFHI guidelines (such as Model Work Orders). Both EFHI 4.201 and the plant-specific programs required testing bases that were more stringent than those suggested in NERC's "Protection System Maintenance, A Technical Reference" (Sep. 13, 2007). Although not required by EFHI 4.201, the EFH Plants generally include battery checks in daily or weekly rounds. During rounds, operators check battery alarms, charger voltage, and general physical battery conditions. In addition to the battery testing and maintenance programs, EFH Plants remotely monitor battery conditions.

**Brunner Island:** EFHI 4.201 required monthly specific gravity and voltage ("SG&V") and temperature testing of pilot cells. Brunner Island did not perform these monthly tasks. Instead, the Brunner Island program required SG&V and temperature testing of all battery cells on a quarterly basis. The Brunner Island program also required testing of battery connections on a quarterly basis. In 2007, Brunner Island performed testing in the 2<sup>nd</sup> and 3<sup>rd</sup> quarters. No testing was performed in the 4<sup>th</sup> quarter of 2007. Brunner Island only performed these tests twice annually in 2008 rather than in each quarter. Other monthly activities noted in EFHI 4.201 were included in daily operator rounds.

**Holtwood:** EFHI 4.201 required monthly SG&V and temperature testing of pilot cells, which Holtwood did not perform. Instead, the Holtwood program required semi-annual SG&V and temperature testing of all battery cells, which Holtwood did timely perform. EFHI 4.201 also required annual inspection of connections and ambient temperature testing. Holtwood performed the inspection once in 2007 and twice per year, starting in 2008. Other monthly activities noted in EFHI 4.201 were included in weekly operator rounds.

**LMBE:** EFHI 4.201 and the LMBE program required monthly inspections of charger voltage, SG&V testing of pilot cells, electrolyte level inspections and sample temperature testing. LMBE missed one of these monthly tests in October 2007 and one in January 2009. LMBE was performing other general battery checks in daily rounds.

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Martins Creek: Martins Creek includes two oil or gas-fired generating units ("Martins Creek 3/4"). EFHI 4.201 required monthly inspections of charger voltage, SG&V testing of pilot cells, electrolyte level inspections, and sample temperature testing. Martins Creek 3/4 units deferred these tests for two months in 2007 and for four months in 2008. Martins Creek performs charger voltage checks, electrolyte level inspections, and visual inspections during daily operator rounds.

Martins Creek also includes separate combustion turbine generator units (the "Martins Creek CTGs"). EFHI 4.201 revisions in effect during the relevant period provided guidelines for only lead-acid batteries used at other EFH plants. However, Martins Creek CTGs replaced the lead acid batteries with Valve Regulated Lead Acid (VRLA) batteries in the fourth quarter of 2008. EFHI 4.201 included a requirement to perform specific gravity checks for pilot cells monthly and for all cells of the battery annually. This check was not done monthly for the original lead acid batteries. This check is not applicable to the current VRLA batteries and therefore not included in the current Martins Creek CTGs' program. EFHI 4.201 required monthly inspections of charger voltage, SG&V testing of pilot cells, electrolyte level inspections, and sample temperature testing. The Martins Creek CTGs performed the monthly required tests twice between June 18, 2007 and December 31, 2007 and 8 times in 2008, rather than each month. Martins Creek CTG performs charger voltage checks, electrolyte level inspections, and visual inspections during weekly operator rounds.

Montour: EFHI 4.201 required monthly SG&V and temperature testing of pilot cells, which Montour did not perform. Instead, the Montour Program required quarterly SG&V and temperature testing of all battery cells; however, it only did these tests three times annually rather than each quarter in 2008. Other monthly activities noted in EFHI 4.201 were included in daily operator rounds.

A root cause analysis was completed, as indicated in the Mitigation Plan details included in Section D.

Note: If a formal root cause analysis evaluation was performed, submit a copy of the summary report.

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.

PPL Generation performed a review of all the EFH plants' battery testing and maintenance activities in early 2009.

Specifically, the actual plant battery testing and maintenance practices were assessed as compared with the battery testing and maintenance guidelines outlined in EFHI 4.201. This assessment included both NERC and non-NERC battery testing and maintenance,

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and was initially performed at the three largest EFH plants: Brunner Island, Montour, and Martins Creek.

The principle finding of the assessment was that the plants were not following EFHI-4.201 verbatim, but had developed plant specific battery testing programs. Assessments were then performed at the other EFH Plants, which confirmed the same finding. Second, the assessment showed that the Work Management Supervisors were exercising discretion to defer periodic battery tests based upon the results of recent monitoring and maintenance records. Since neither EFHI 4.201 nor the plant-specific programs documented the test deferral option, it was determined that the EFH plants' practices may not have met the intent of PRC-005-1 to develop and follow a documented Protection System testing and maintenance program.

When PPL Generation discovered that the plant-specific battery testing programs were different than that prescribed by EFHI 4.201, a review was done to benchmark the actual battery testing and maintenance performed at the plants to the testing and maintenance requirements indicated in NERC's "Protection System Maintenance, A Technical Reference," dated September 13, 2007. That document prescribes monthly voltage verification for station batteries that are not continuously monitored for battery voltage.

At the EFH Plants:

- All battery voltages are continuously monitored via centralized alarms.
- Operators inspect batteries as part of their normal rounds. Most plants perform the battery inspections daily. One plant performs the inspections weekly.
- Plant maintenance is available to operations for remedial action if a battery alarm is received.
- Plant maintenance administers the routine predictive maintenance program.

It is believed that these regimens exceed the suggested battery testing guideline provided in the NERC Protection System Maintenance document.

## **Section D: Details of Proposed Mitigation Plan**

### **Mitigation Plan Contents**

- 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.

PPL Generation, representing the reporting Registered Entities listed above, has taken or plans to take the following actions to improve the testing and maintenance programs required for equipment as identified in NERC Standard PRC-005.

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D.1.1 Training/Communication – As an interim step, management discussed the details of each plant's failure to meet all of the battery testing intervals with appropriate personnel to highlight the need for strict adherence to testing and maintenance programs for equipment important to the reliability of the bulk electric system. Plant personnel were directed to perform all battery testing and maintenance activities for NERC equipment in accordance with current written plant procedures until EFHI 4.201 was revised to include the previously unwritten practice that allows battery maintenance and testing to be deferred one cycle. The PPL Generation Compliance Committee members also discussed this event to share lessons learned across the PPL Generation fleet. These work group discussions emphasized the importance of performing routine testing and maintenance activities for equipment important to the reliability of the bulk electric system.

**Action complete**

D.1.2 Training/Communication – PPL Generation, on behalf of its NERC registered subsidiaries, developed a NERC awareness video to be presented to applicable employees. The training was provided to employees of generation registered entities as appropriate based on job function. Appropriate employees were trained by the end of the third quarter 2009. This training emphasizes the importance of performing routine testing and maintenance activities for equipment important to the reliability of the bulk electric system.

**Action complete**

D.1.3 Procedure Change - PPL Generation issued a change to the battery testing and maintenance procedure, EFHI 4.201 Rev 4, to document the previously unwritten process that allows Work Management Supervisors to exercise their judgment to defer only one cycle of periodic battery tests based upon the results in recent monitoring and maintenance records. This change recognizes that routine testing activities can be deferred by one cycle without adverse impact to the reliability of the equipment and ensures that the plants are working to a defined program. As a result of the changes in Revision 4 of EFHI 4.201, the plant battery maintenance and testing activities became fully compliant with the documented program and the requirements of PRC-005.

**Action complete**

D.1.4 Root Cause Analysis – A Root Cause Analysis (RCA) was conducted to determine why EFH Plant battery maintenance programs deviated from department instruction EFHI 4.201. The RCA included four recommended actions.

1. The Generation Technical Services group within PPL Generation (“GTS”) needs to clearly define if the EFHI is a guideline or an instruction that shall be followed by all plants to be in compliance with EFH in order to comply with Regulatory requirements.

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2. GTS needs a clear and effective means of ensuring that plant management, of existing or new plants, is aware of the EFHI requirements.
3. GTS needs to update the EFHI to include the equipment and processes in all plants. Some of the batteries installed at the new plants were not covered in the EFHI.
4. GTS needs to establish an audit system for monitoring compliance with EFHI. Maintenance documentation needs to be such that compliance with EFHI can be determined.

Two of the RCA recommendations, items 1 and 3, were already completed by the actions taken as part of D.1.1 and D.1.3. The two open items are addressed in Mitigation Plan actions D.1.4.a and D.1.4.b as follows:

D.1.4.a Employee Orientation Program – PPL Generation must develop an employee orientation program that includes the requirements of the PPL NERC Compliance Program and the EFHIs used to maintain compliance with applicable NERC Electric Reliability requirements. This indoctrination program should be provided to new employees, employees new to certain plant responsibilities including operation, maintenance, work control, or plant management, and to employees of acquired plants.

**Due Date: December 15, 2009**

D.1.4.b Establish an Audit System – PPL Generation must develop a process to verify conformance with the procedures established by EFHIs.

**Due Date: December 15, 2009**

D.1.5 Equipment Identification Change – The work management system was enhanced to clearly identify work orders related to battery maintenance for compliance with NERC Standard PRC-005. Battery sets were identified in the work management system to notify personnel that testing and maintenance activities associated with the equipment has a high priority and may require additional documentation to ensure that the EFH Plants can show they comply with its protection system maintenance program as required by NERC Electric Reliability Standards.

**Action complete**

D.1.6 New Procedure - PPL Generation issued a separate procedure for NERC related batteries. This new procedure provides additional direction for EFH Plant batteries that

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must comply with NERC Standard PRC-005 and associated Regional Reliability Organization standards. The additional procedure for maintenance and testing of batteries important to the generator protection systems and equipment connected to the BES emphasizes the importance of completing the actions of the procedure exactly with precise documentation. The strategy reflected in the revised procedure meets or exceeds the guidance provided in NERC's "Protection System Maintenance, A Technical Reference," dated September 13, 2007.

**Due Date: Action complete**

### **Mitigation Plan Timeline and Milestones**

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, and/or whether the actions necessary to assure the entity has returned to full compliance have been completed.

**Several actions identified in this Mitigation Plan have been completed. Completion of these actions returned the entities to full compliance with PRC-005. The remaining actions identified in this Mitigation Plan will be completed by December 15, 2009.**

D.3 Enter Key Milestone Activities (with due dates) that can be used to track and indicate progress towards timely and successful completion of this Mitigation Plan.

Key Milestone Activity	Proposed/Actual Completion Date* (shall not be more than 3 months apart)
<b>D.1.1 Initial Training/Communications</b>	<b>Completed</b>
<b>D.1.2 NERC Awareness Video Presentations</b>	<b>Completed</b>
<b>D.1.3 Revise EFHI 4.201</b>	<b>Completed</b>
<b>D.1.4 Root Cause Analysis</b>	<b>Completed</b>
<b>D.1.4.a Employee NERC Orientation Program</b>	<b>December 15, 2009</b>
<b>D.1.4.b EFHI Audit System</b>	<b>December 15, 2009</b>
<b>D.1.5 NERC Equipment Identification</b>	<b>Completed</b>
<b>D.1.6 New NERC Battery Test. &amp; Maintenance Procedure</b>	<b>Completed</b>

(\* ) Note: Additional violations could be determined for not completing work associated with accepted milestones.

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## **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 was minimal reliability impact caused by the missed battery tests and there were no battery failures associated with these missed battery tests. The EFH Plant batteries are continuously monitored in the control room via system ground alarm and metering equipment. In addition, plant maintenance practices include daily or weekly visual inspections of battery conditions. Each of the EFH Plants' programs for battery testing and maintenance exceeds the suggested battery monitoring and testing bases identified in NERC's "Protection System Maintenance, A Technical Reference," dated September 13, 2007.

The actions of this Mitigation Plan that have already been completed, ensure that the EFH Plants are working to approved programs that adequately maintain battery equipment necessary for the reliability of the bulk electric system and that employees understand the importance of these programs. Completed actions have also provided tools to aid employees in performing the required work for NERC batteries. As a result of the actions taken, EFH Plants have completed the required maintenance and testing for batteries included in the scope of NERC PRC-005. As a result of the mitigation actions taken since GTS identified the missed battery activities, the plants have come into compliance with the Reliability Standard. The remaining actions of the Mitigation Plan, identified during the Root Cause Analysis, when complete will provide additional assurance that EFH Plants maintain future compliance with the battery testing requirements.

### **Prevention of Future BPS Reliability Risk**

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

The procedural changes will ensure that each of the reporting Registered Entities is working to an approved testing and maintenance program that allows judgment to defer routine activities based on equipment condition. The training will emphasize to

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personnel the importance of following testing and maintenance programs and preparing adequate documentation to demonstrate compliance. The changes to the work management system will aid personnel in identifying the required work for equipment covered by NERC Standard PRC-005.

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## 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 ReliabilityFirst 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 Vice President and Chief Operating Officer of  
Lower Mount Bethel Energy, LLC  
PPL Brunner Island, LLC  
PPL Holtwood, LLC  
PPL Martins Creek, LLC  
PPL Montour, LLC
  2. I am qualified to sign this Mitigation Plan on behalf of  
Lower Mount Bethel Energy, LLC  
PPL Brunner Island, LLC  
PPL Holtwood, LLC  
PPL Martins Creek, LLC  
PPL Montour, LLC
  3. I have read and am familiar with the contents of this Mitigation Plan.
  4. Lower Mount Bethel Energy, LLC; PPL Brunner Island, LLC; PPL Holtwood, LLC; PPL Martins Creek, LLC; and PPL Montour, LLC agree to comply with, this Mitigation Plan, including the timetable completion date, as accepted by ReliabilityFirst and approved by NERC.

**Authorized Individual Signature**

A handwritten signature in blue ink that reads "Dennis J. Murphy".

Name (Print):

Dennis J. Murphy

Title:

Vice President and Chief Operating Officer

Date:

November 12, 2009

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**Section G: Regional Entity Contact**

Please direct completed forms or any questions regarding completion of this form to the ReliabilityFirst Compliance e-mail address [mitigationplan@rfirst.org](mailto:mitigationplan@rfirst.org).

Please indicate the company name and reference the NERC Violation ID # (if known) in the subject line of the e-mail. Additionally, any ReliabilityFirst Compliance Staff member is available for questions regarding the use of this form. Please see the contact list posted on the ReliabilityFirst Compliance web page.



## **Attachment A – Compliance Notices & Mitigation Plan Requirements**

- I. Section 6.2 of the CMEP<sup>1</sup> sets forth the information that must be included in a Mitigation Plan. The Mitigation Plan must include:
- (1) The Registered Entity's point of contact for the Mitigation Plan, who shall be a person (i) responsible for filing the Mitigation Plan, (ii) technically knowledgeable regarding the Mitigation Plan, and (iii) authorized and competent to respond to questions regarding the status of the Mitigation Plan.
  - (2) The Alleged or Confirmed Violation(s) of Reliability Standard(s) the Mitigation Plan will correct.
  - (3) The cause of the Alleged or Confirmed Violation(s).
  - (4) The Registered Entity's action plan to correct the Alleged or Confirmed Violation(s).
  - (5) The Registered Entity's action plan to prevent recurrence of the Alleged or Confirmed violation(s).
  - (6) The anticipated impact of the Mitigation Plan on the bulk power system reliability and an action plan to mitigate any increased risk to the reliability of the bulk power-system while the Mitigation Plan is being implemented.
  - (7) A timetable for completion of the Mitigation Plan including the completion date by which the Mitigation Plan will be fully implemented and the Alleged or Confirmed Violation(s) corrected.
  - (8) Key implementation milestones no more than three (3) months apart for Mitigation Plans with expected completion dates more than three (3) months from the date of submission. Additional violations could be determined for not completing work associated with accepted milestones.
  - (9) Any other information deemed necessary or appropriate.
  - (10) The Mitigation Plan shall be signed by an officer, employee, attorney or other authorized representative of the Registered Entity, which if applicable, shall be the person that signed the Self-Certification or Self Reporting submittals.
- II. This submittal form must be used to provide a required Mitigation Plan for review and acceptance by ReliabilityFirst and approval by NERC.
- III. This Mitigation Plan is submitted to ReliabilityFirst and NERC as confidential information in accordance with Section 1500 of the NERC Rules of Procedure.
- IV. This Mitigation Plan Submittal Form may be used to address one or more related Alleged or Confirmed violations of one Reliability Standard. A separate

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<sup>1</sup> "Compliance Monitoring and Enforcement Program" of the ReliabilityFirst Corporation;" a copy of the current version approved by the Federal Energy Regulatory Commission is posted on the ReliabilityFirst website.

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mitigation plan is required to address Alleged or Confirmed violations with respect to each additional Reliability Standard, as applicable.

- V. If the Mitigation Plan is accepted by ReliabilityFirst and approved by NERC, a copy of this Mitigation Plan will be provided to the Federal Energy Regulatory Commission in accordance with applicable Commission rules, regulations and orders.
- VI. ReliabilityFirst or NERC may reject Mitigation Plans that they determine to be incomplete or inadequate.
- VII. Remedial action directives also may be issued as necessary to ensure reliability of the BPS.

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## DOCUMENT CONTROL

**Title:** Mitigation Plan Submittal Form  
**Issue:** Version 2.0  
**Date:** 11 July 2008  
**Distribution:** Public  
**Filename:** ReliabilityFirst Mitigation Plan Submittal Form - Ver 2.DOC  
**Control:** Reissue as complete document only

## DOCUMENT APPROVAL

Prepared By	Approved By	Approval Signature	Date
Robert K. Wargo Senior Consultant Compliance	Raymond J. Palmieri Vice President and Director Compliance	<i>Raymond J. Palmieri</i>	1/2/08

## DOCUMENT CHANGE/REVISION HISTORY

Version	Prepared By	Summary of Changes	Date
1.0	Robert K. Wargo	Original Issue – Replaces “Proposed Mitigation Plan” Form	1/2/08
2.0	Tony Purgar	Revised email address from <a href="mailto:compliance@rfirst.org">compliance@rfirst.org</a> to <a href="mailto:mitigationplan@rfirst.org">mitigationplan@rfirst.org</a>	7/11/08

# **Attachment C**

## **Certification of Mitigation Plan Completion**

**Dated December 15, 2009**



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## Certification of Mitigation Plan Completion

Submittal of a Certification of Mitigation Plan Completion shall include data or information sufficient for ReliabilityFirst Corporation to verify completion of the Mitigation Plan. ReliabilityFirst Corporation may request 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)

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Registered Entity Name:

Lower Mount Bethel Energy, LLC (registered as PPL Lower Mount Bethel Energy, LLC)  
PPL Brunner Island, LLC  
PPL Holtwood, LLC  
PPL Martins Creek, LLC  
PPL Montour, LLC

NERC Registry ID:

NCR00882 (Lower Mount Bethel Energy)  
NCR00883 (Brunner Island)  
NCR00886 (Holtwood)  
NCR00887 (Martins Creek)  
NCR00888 (Montour)

Date of Submittal of Certification:

NERC Violation ID No(s):

RFC200900158  
RFC200900159  
RFC200900160  
RFC200900161  
RFC200900162

Reliability Standard and the Requirement(s) of which a violation was mitigated:PRC-005 R2.1

Date Mitigation Plan was scheduled to be completed per accepted Mitigation Plan:December 15, 2009

Date Mitigation Plan was actually completed:December 15, 2009

Additional Comments (or List of Documents Attached):Mitigation Plan Contents



PPL Generation, representing the reporting Registered Entities listed above, has taken the following actions to improve the testing and maintenance programs required for equipment as identified in NERC Standard PRC-005.

D.1.1 Training/Communication – As an interim step, plant management and NERC compliance personnel discussed the details of each plant's failure to meet all of the battery testing requirements with appropriate personnel to highlight the need for strict adherence to testing and maintenance programs for equipment subject to the reliability standard. Plant personnel were directed to perform all battery testing and maintenance activities for Protection Systems equipment in accordance with current written plant procedures until the overarching policy for the fleet plants, Eastern Fossil & Hydro Instruction ("EFHI") 4.201, was revised. The PPL Generation Compliance Committee members also discussed this event to share lessons learned across the PPL Generation fleet. These work group discussions emphasized the importance of performing routine testing and maintenance activities for equipment important to the reliability of the bulk electric system.

Action complete

Evidence: The attached exhibits are meeting agendas that include the discussion of PRC-005 activities. The first meeting included plant management and was a discussion of the recently identified battery maintenance issue and the presentation of the new NERC awareness video. The second meeting included NERC Compliance personnel responsible for various PPL Generation Registered Entities.

Exhibit 1: Agenda for Eastern Fossil & Hydro ("EFH") group staff meeting April 15, 2009

Exhibit 2: Agenda for Compliance Committee Meeting April 23, 2009

D.1.2 Training/Communication – PPL Generation, on behalf of its NERC registered subsidiaries, developed a NERC awareness video to be presented to applicable employees. The training was provided to employees of generation registered entities as appropriate based on job function. Appropriate employees were trained by the end of the third quarter 2009. This training emphasized the importance of performing routine testing and maintenance activities for equipment important to the reliability of the bulk electric system.

Action complete

Evidence: The attached video brochure was provided to personnel that attended the NERC Awareness training. A copy of the training is being sent via FedEx to RFC.

Exhibit 3: NERC Awareness Video Brochure

Exhibit 4: NERC Awareness Training Roster

D.1.3 Procedure Change - PPL Generation issued a change to the battery testing and maintenance procedure, EFHI 4.201 Rev 4, to document the previously unwritten practice whereby Work Management Supervisors could exercise their judgment to defer only one cycle of periodic battery tests based upon the results in recent monitoring and maintenance records. This change recognizes that, given the frequency of testing incorporated in the PPL EFHI program, routine testing activities can be deferred by one cycle



without adverse impact to the reliability of the equipment and ensures that the plants are working to a defined program.

Action complete

Evidence:

Exhibit 5: EFHI 4.201 Revision 4, MAINTENANCE OF STATION BATTERY SYSTEMS, attached.

D.1.4 Root Cause Analysis – A Root Cause Analysis (RCA) was conducted to determine why EFH Plant battery maintenance programs deviated from PPL Generation instruction EFHI 4.201. The RCA included four recommended actions.

Actions complete

1. The Generation Technical Services group within PPL Generation (“GTS”) needs to clearly define if the EFHI is a guideline or an instruction that shall be followed by all plants in order to comply with Regulatory requirements.

Evidence: This RCA recommendation was addressed in revision 4 of EFHI 4.201.

Exhibit 5: EFHI 4.201 Revision 4, MAINTENANCE OF STATION BATTERY SYSTEMS, attached.

2. GTS needs a clear and effective means of ensuring that plant management, of existing or new plants, is aware of the EFHI requirements. This RCA recommendation resulted in the following Mitigation Action Plan item:

D.1.4.a Employee Orientation Program – PPL Generation must develop an employee orientation program that includes the requirements of the PPL NERC Compliance Program and the EFHIs used to maintain compliance with applicable NERC Reliability Standard requirements. This orientation program should be provided to new employees, employees new to certain plant responsibilities including operation, maintenance, work control, or plant management, and to employees of acquired plants.

Evidence: To complete this RCA recommendation, the original NERC Awareness training video was revised to include references that emphasize procedure use and locations for procedures. These changes highlight the role of procedures in meeting NERC compliance. For the EFH plants, the training generally identifies the Eastern Fossil & Hydro instruction as a procedure that supports NERC compliance. For EFH plants, this training will be presented to new employees and was made mandatory for appropriate personnel on an annual basis. A copy of the training is being sent via FedEx to RFC.

3. GTS needs to update the EFHI to include the equipment and processes in all plants. Some of the batteries installed at the new plants were not covered in the EFHI.

Evidence: This RCA recommendation was addressed in revision 1 of EFHI 10.04.01



Exhibit 6: EFHI 10.04.01 Revision 0, MAINTENANCE OF NERC STATION BATTERY SYSTEMS, attached.

4. GTS needs to establish an audit system for monitoring compliance with EFHI. Maintenance documentation needs to be such that compliance with EFHI can be determined. This RCA recommendation resulted in the following Mitigation Action Plan item:

D.1.4.b Establish an Audit System – PPL Generation must develop a process to verify conformance with the procedures established by EFHIs.

Evidence: PPL uses Enviance as a work/action tracking program for NERC compliance. Two new recurring tasks have been added to Enviance to provide routine verification that battery maintenance activities are performed in accordance with EFHI 10.04.01. These two new tasks will be issued to members of the NERC compliance team to routinely verify that plants are performing the work tasks to meet the requirements identified in EFHI 10.04.01. Applicable screenshots for these activities are included in the attached file.

Exhibit 7: Enviance Screenshots

D.1.5 Equipment Identification Change – The work management system was enhanced to clearly identify work orders related to battery maintenance for compliance with NERC Standard PRC-005. The batteries were identified in the work management system to notify personnel that testing and maintenance activities associated with the equipment has a high priority and may require additional documentation to ensure that the EFH Plants can show they comply with its protection system maintenance program as required by NERC Electric Reliability Standards.

Action complete

Evidence: The plant work management tool PASSPORT was updated to identify battery equipment included in the scope of PRC-005 with a field called NERC.

Exhibit 8: Passport Screenshots

D.1.6 New Procedure - PPL Generation issued a separate procedure for NERC related batteries. This new procedure provides additional direction for EFH Plant batteries that must comply with NERC Standard PRC-005 and associated Regional Entity standards. The additional procedure for maintenance and testing of batteries important to the generator protection systems and equipment connected to the BES emphasizes the importance of completing the actions of the procedure exactly with precise documentation. The strategy reflected in the revised procedure meets or exceeds the guidance provided in NERC's "Protection System Maintenance, A Technical Reference," dated September 13, 2007.

Action complete

Evidence:

Exhibit 6: EFHI 10.04.01 Revision 0, MAINTENANCE OF NERC STATION BATTERY SYSTEMS, attached.



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I certify that the Mitigation Plan for the above named violation has been completed on the date shown above and that all submitted information is complete and correct to the best of my knowledge.

Name: Dennis J. Murphy

Title: Vice President and Chief Operating Officer

Email: djmurphy@pplweb.com

Phone: 610-774-4316

Authorized Signature \_\_\_\_\_

A handwritten signature in black ink that reads "Dennis J. Murphy".

Date 12/15/2009

Please direct completed forms or any questions regarding completion of this form to the ReliabilityFirst Compliance e-mail address [mitigationplan@rfirst.org](mailto:mitigationplan@rfirst.org).

Please indicate the company name and reference the NERC Violation ID # (if known) in the subject line of the e-mail. Additionally, any ReliabilityFirst Compliance Staff member is available for questions regarding the use of this form. Please see the contact list posted on the ReliabilityFirst Compliance web page.



**DOCUMENT CONTROL**

**Title:** Certification of Mitigation Plan Completion  
**Issue:** Version 1  
**Date:** 5 January 2008  
**Distribution:** Public  
**Filename:** Certification of a Completed Mitigation Plan\_Ver1.doc  
**Control:** Reissue as complete document only

**DOCUMENT APPROVAL**

<b>Prepared By</b>	<b>Approved By</b>	<b>Approval Signature</b>	<b>Date</b>
Robert K. Wargo Manager of Compliance Enforcement	Raymond J. Palmieri Vice President and Director Compliance		1/5/2009



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**DOCUMENT CHANGE/REVISION HISTORY**

<b>Version</b>	<b>Prepared By</b>	<b>Summary of Changes</b>	<b>Date</b>
1.0	Robert K. Wargo	Original Issue	1/5/2009

# **Attachment D**

## Summary and Review of Mitigation Plan Completion

Dated July 29, 2010

July 29, 2010

**Summary and Review of Evidence of Mitigation Plan Completion**

<b>NERC Violation ID #:</b>	<b>RFC200900158 RFC200900159 RFC200900160 RFC200900161 RFC200900162</b>
<b>NERC Plan ID:</b>	<b>MIT-07-2139</b>
<b>Registered Entity;</b>	<b>PPL Brunner Island, LLC PPL Lower Mount Bethel Energy, LLC PPL Holtwood, LLC PPL Martins Creek, LLC PPL Montour, LLC</b>
<b>NERC Registry ID:</b>	<b>NCR00883 NCR00882 NCR00886 NCR00887 NCR00888</b>
<b>Standard:</b>	<b>PRC-005-1</b>
<b>Requirement:</b>	<b>2.1</b>
<b>Status:</b>	<b>Mitigation Plan Verified Complete</b>

**Relevant Background:**

PPL Generation LLC (“PPL Generation”), acting on behalf of PPL Brunner Island, LLC; PPL Lower Mount Bethel Energy, LLC; PPL Holtwood, LLC; PPL Martins Creek, LLC; and PPL Montour, LLC (collectively, the “EFH Plants”), submitted a Violation Self-Reporting Form on July 22, 2009 (the “Self-Report”) reporting non-compliance with NERC Reliability Standard PRC-005-1, Requirement 2.1. Specifically, the EFH Plants had in place battery testing and maintenance plans, but in some instances the battery tests were not conducted as frequently as indicated in the respective plans, and the plans did not document a test deferral option. PPL Generation submitted a Proposed Mitigation Plan to ReliabilityFirst on November 12, 2009 (the “Mitigation Plan”), whereby PPL Generation committed to complete all mitigating actions on December 15, 2009. The Mitigation Plan, designated MIT-07-2139, was accepted by ReliabilityFirst on November 16, 2009 and approved by NERC on December 4, 2009.

**Review Process:**

On December 15, 2009 PPL Generation certified that Mitigation Plan for PRC-005-1, R2.1 was completed as of December 15, 2009. ReliabilityFirst requested and received evidence of completion for actions taken by PPL Generation as specified in the Mitigation Plan. ReliabilityFirst performed an in depth review of the information provided to verify that all actions specified in the Mitigation Plan were successfully completed.

Summary and Review of Mitigation Plan Completion  
PPL Generation, LLC  
July 29, 2010  
Page 2 of 5

**PRC-005-1, R2** states:

**R2.** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:

**R2.1.** Evidence Protection System devices were maintained and tested within the defined intervals.

**R2.2.** Date each Protection System device was last tested/maintained.

**Evidence of Mitigating Actions:**

**Requirement 2.1:**

*Summary of Battery Maintenance (provided for all EFH Plants), June 2007 – July 2009, dated June 7, 2009.*

These summaries identify the batteries in service at the EFH Plants at the time of the Self-Report. These summaries also state when each battery was last maintained and tested and show that as of December 15, 2009, all batteries in service at the EFH Plants were maintained and tested in accordance with the intervals provided in PPL Generation's protection system maintenance and testing plan. These tests were necessary to demonstrate compliance to PRC-005-1, R2.1.

The Mitigation Plan further stated that PPL Generation would take a number of additional steps in order to prevent similar violations from arising in the future. Each of these steps and the evidence demonstrating completion of these steps is discussed below.

*Mitigation Plan Section D.1.1-Training/Communication.*

To prevent any interim risk to reliability, PPL Generation management discussed the details of each EFH Plant's failure to meet all of the battery testing intervals with appropriate personnel to highlight the need for strict adherence to testing and maintenance programs for equipment important to the reliability of the bulk electric system. Plant personnel were directed to perform all battery testing and maintenance activities for equipment subject to PRC-005 in accordance with current written plant procedures until EFHI 4.201 was revised to include the previously unwritten practice that allows battery maintenance and testing to be deferred one cycle. ReliabilityFirst verified this action as complete by reviewing the Agenda for Eastern Fossil & Hydro ("EFH") group staff meeting held April 15, 2009.

## Summary and Review of Mitigation Plan Completion

PPL Generation, LLC

July 29, 2010

Page 3 of 5

The PPL Generation Compliance Committee members also discussed this event to share lessons learned across the PPL Generation fleet. These work group discussions emphasized the importance of performing routine testing and maintenance activities for equipment important to the reliability of the bulk electric system. ReliabilityFirst verified this action as complete by reviewing the agenda for Compliance Committee Meeting held April 23, 2009.

Additionally, PPL Generation, on behalf of the EFH Plants, developed a NERC awareness video to be presented to applicable employees. The training was provided to employees as appropriate based on job function. Employees were trained by the end of the third quarter 2009. This training emphasized the importance of performing routine testing and maintenance activities for equipment important to the reliability of the bulk electric system. ReliabilityFirst verified this activity as complete by reviewing PPL Generation's NERC Electric Reliability Standards awareness video and NERC Awareness Training 2009 brochure and the roster of 1102 employees who viewed the video between April 15, 2009 and September 30, 2009.

*Mitigation Plan Section D.1.3-Procedure Change.*

PPL Generation changed its battery testing and maintenance procedure, *Maintenance of Station Battery Systems*, Eastern Fossil & Hydro Instruction ("EFHI") 4.201, Revision 4, dated June 4, 2009, and effective August 1, 2009 ("EFHI 4.201"), to document a previously unwritten policy allowing supervisors to exercise judgment and defer one cycle of periodic battery tests based upon the results of recent maintenance and testing records. This change recognized that routine testing activities can be deferred by one cycle without adverse impact to the reliability of the equipment and ensures that the plants are working to a defined program. As a result of the changes in EFHI 4.201, the EFH Plants' battery maintenance and testing activities became fully compliant with the documented program and the requirements of PRC-005.

*Mitigation Plan Section D.1.4-Root Cause Analysis.*

A Root Cause Analysis ("RCA") was undertaken to determine why the EFH Plants' battery maintenance programs deviated from EFHI 4.201. ReliabilityFirst verified this activity as complete by reviewing the RCA, dated September 15, 2009. The RCA included four recommended actions:

- The Generation Technical Services ("GTS") group within PPL Generation should clearly define if EFHI 4.201 is a guideline or an instruction that shall be followed by all plants to be in compliance with Reliability Standards. This suggestion was addressed through the changes to EFHI 4.201 discussed above.
- GTS should have a clear and effective means of ensuring that PPL Generation plant management is aware of the EFHI 4.201 requirements. See Mitigation Plan Section D.1.4.a, discussed below.
- GTS should update EFHI 4.201 to incorporate the equipment and processes in all PPL Generation plants. Some of the batteries installed at the new plants were not covered in EFHI 4.201. This suggestion was addressed through the creation of a new

Summary and Review of Mitigation Plan Completion  
PPL Generation, LLC  
July 29, 2010  
Page 4 of 5

- procedure, *Maintenance of NERC Station Battery Systems*, EFHI 10.04.01. Revision 0, dated September 25, 2009, and effective September 30, 2009.
- GTS should establish an audit system for monitoring compliance with EFHI 4.201. Maintenance documentation needs to be such that compliance with EFHI 4.201 can be determined. See Mitigation Plan Section D.1.4.b, discussed below.

*Mitigation Plan Section D.1.4.a-Employee Orientation Program.*

PPL Generation developed an employee orientation program that including the discussion of PPL Generation's NERC Compliance Program and the documents and procedures used to maintain compliance with applicable NERC Electric Reliability Standards. This orientation program is administered to new employees, employees new to certain plant responsibilities including operation, maintenance, work control, or plant management, and to employees of acquired plants. ReliabilityFirst verified this action as complete by reviewing the updated *NERC Electric Reliability Standards Awareness Video*, discussed above. This video includes discussions emphasizing appropriate procedure use and locations for procedures. This video also highlights the role of procedures in meeting NERC compliance.

*Mitigation Plan Section D.1.4.b-Establish an Audit System.*

PPL Generation developed a process to verify conformance with its internal procedures established to ensure compliance with NERC Reliability Standards. ReliabilityFirst verified this action as complete by reviewing screenshots from PPL Generation's auditing software, dated October 28, 2009 through December 13, 2009. This software is a work and action tracking program tracking NERC compliance. Two new recurring tasks are now tracked by this software to provide routine verification that battery maintenance activities are performed. PPL Generation verifies that plants are performing these tasks.

*Mitigation Plan Section D.1.5-Equipment Identification Change.*

PPL Generation enhanced its work management system to identify work orders related to batteries subject to PRC-005. This system will notify personnel that testing and maintenance activities associated with these batteries may require additional documentation to ensure that the PPL Generation can show compliance on behalf of its affiliated Registered Entities. ReliabilityFirst verified this action as complete by reviewing screenshots from PPL Generation's work management system.

*Mitigation Plan Section D.1.6-New Procedure.*

PPL Generation issued a separate procedure for batteries subject to compliance with PRC-005, providing additional instructions such batteries. The additional procedure emphasizes the importance of completing the actions of the procedure exactly with precise documentation. The requirements reflected in the revised procedure meet or exceed the guidance provided in NERC's "Protection System Maintenance, A Technical Reference," dated September 13, 2007.

Summary and Review of Mitigation Plan Completion  
PPL Generation, LLC  
July 29, 2010  
Page 5 of 5

ReliabilityFirst verified this action as complete by reviewing *Maintenace of NERC Station Battery Systems*, EFHI 10.04.01, Revision 0, dated September 25, 2009, and effective September 30, 2009.

**Review Results:**

ReliabilityFirst reviewed the evidence PPL Generation submitted on behalf of the EFH Plants in support of its Certification of Mitigation Plan Completion. On July 29, 2010, ReliabilityFirst verified that the Mitigation Plan was completed in accordance with its terms and has therefore deemed that the EFH Plants have successfully completed the mitigation Plan associated with the alleged violation of the aforementioned NERC Reliability Standard.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Robert K. Wargo". The signature is written in a cursive style with a large, sweeping initial 'R'.

Robert K. Wargo  
Manager of Compliance Enforcement  
ReliabilityFirst Corporation

**Attachment b**

**Disposition Document**

## DISPOSITION OF VIOLATION<sup>1</sup>

**Dated November 2, 2010**

NERC TRACKING NO.	REGIONAL ENTITY TRACKING NO.	NOC#
<b>RFC200900158</b>	<b>RFC200900158</b>	<b>NOC-633</b>
<b>RFC200900159</b>	<b>RFC200900159</b>	
<b>RFC200900160</b>	<b>RFC200900160</b>	
<b>RFC200900161</b>	<b>RFC200900161</b>	
<b>RFC200900162</b>	<b>RFC200900162</b>	

REGISTERED ENTITY	NERC REGISTRY ID
<b>PPL Brunner Island, LLC (Brunner Island) - Lower Mount Bethel Energy, LLC (LMBE)<sup>2</sup></b>	<b>NCR00883</b>
<b>PPL Holtwood, LLC (Holtwood)</b>	<b>NCR00882</b>
<b>PPL Martins Creek, LLC (Martins Creek)</b>	<b>NCR00886</b>
<b>PPL Montour, LLC (Montour)</b>	<b>NCR00887</b>
	<b>NCR00888</b>

REGIONAL ENTITY  
**ReliabilityFirst Corporation (ReliabilityFirst)**

### I. REGISTRATION INFORMATION

ALL PPL ENTITIES ARE REGISTERED FOR THE FOLLOWING FUNCTIONS:

BA	DP	GO	GOP**	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
		X	X				X							
		5/30/07	5/30/07				5/30/07							

\* VIOLATIONS APPLIES TO SHADED FUNCTION

\*\* **Martins Creek is registered as a CFR for this function.**

#### DESCRIPTION OF THE REGISTERED ENTITY

**PPL Corporation, headquartered in Allentown, Pennsylvania, controls or owns nearly 12,000 MW of generating capacity in the United States, sells energy in key U.S. markets, and delivers electricity to about 4 million customers in Pennsylvania**

<sup>1</sup> 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.

<sup>2</sup> Lower Mount Bethel Energy, LLC is registered on the NERC Compliance Registry as PPL Lower Mount Bethel Energy, LLC.

and the United Kingdom. PPL Generation, which is itself an indirect subsidiary of PPL Corporation has as subsidiaries, among others, the facilities that are the subject of the instant enforcement action. PPL Generation refers to these five subsidiaries as the “Eastern Fossil & Hydro (EFH) Plants.” The facilities owned and operated by the EFH Plants that meet the NERC registry criteria are as follows:

- Brunner Island consists of three coal fired generating units with a total generating capacity of approximately 1,442 MW;
- LMBE is a combined cycle plant and consists of two natural gas fired generating units and a heat recovery steam unit with a total generating capacity of approximately 551.2 MW;
- Holtwood consists of 10 hydroelectric generators with a total generating capacity of approximately 110.5 MW;
- Martins Creek consists of two oil and/or natural gas fired generating units and four combustion turbine generators (CTGs) with a total generating capacity of approximately 1,702 MW; and
- Montour consists of two coal fired generating units with a total generating capacity of approximately 1,515 MW.

## II. VIOLATION INFORMATION

NERC Violation ID	RELIABILITY STANDARD	REQUIREMENT(S)/ SUB-REQUIREMENT(S)	VRF(S)	VSL(S)
<b>RFC200900158</b>	<b>PRC-005-1</b>	<b>2/2.1</b>	<b>HIGH<sup>3</sup></b>	<b>LOWER<sup>4</sup></b>
<b>RFC200900159</b>				
<b>RFC200900160</b>				
<b>RFC200900161</b>				
<b>RFC200900162</b>				

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

**The purpose statement of PRC-005-1 provides: “To ensure all transmission and generation Protection Systems<sup>[5]</sup> affecting the reliability of the Bulk Electric System (BES) are maintained and tested.” (Footnote added)**

<sup>3</sup> PRC-005-1 R2 has a “Lower” VRF; PRC-R2.1 and R2.2 each have a “High” VRF. In the context of these cases, ReliabilityFirst determined that the violations related to R2.1, and therefore a “High” VRF is appropriate.

<sup>4</sup> ReliabilityFirst determined the VSLs based on the ratio of the number of devices that were non-compliant to the total number of Protection System devices.

<sup>5</sup> *The NERC Glossary of Terms Used in Reliability Standards* defines Protection System as “Protective relays, associated communication systems, voltage and current sensing devices, station batteries and DC control circuitry.”

PRC-005-1 R2 provides:

**R2. Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization<sup>[6]</sup> on request (within 30 calendar days). The documentation of the program implementation shall include:**

**R2.1. Evidence Protection System devices were maintained and tested within the defined intervals.**

**R2.2. Date each Protection System device was last tested/maintained.**

(Footnote added)

#### VIOLATION DESCRIPTION

On July 22, 2009, PPL Generation, on behalf of the EFH Plants, submitted a Self-Report to ReliabilityFirst identifying five violations of NERC Reliability Standard PRC-005-1 R2.1.

According to the Self-Report, the EFH Plants had in place battery testing and maintenance plans, but the battery tests were not conducted as frequently as indicated in the respective plans, and the plans did not document a test deferral option. Specifically, PPL Generation had promulgated guidelines for battery testing and maintenance for the EFH Plants, contained in *Eastern Fossil Hydro Instructions (EFHI) 4.201*. Each of the EFH Plants had developed individual, plant-specific battery testing and maintenance programs to implement the guidelines contained in *EFHI 4.201*. In particular, *EFHI 4.201, Revision 3* provided the guidelines to properly maintain all lead-acid battery systems. *EFHI 4.201* sets maintenance and testing intervals and describes their basis for station batteries at the EFH Plants. The violations addressed herein arose because the EFH Plants failed to test and maintain batteries within the intervals defined in *EFHI 4.201*.

ReliabilityFirst determined that each of the EFH Plants violated PRC-005-1 R2.1 by failing to test batteries within the intervals established by *EFHI 4.201* or the plant specific program. Each violation is discussed in greater detail below.

#### **Brunner Island—RFC200900158**

***EFHI 4.201* requires monthly specific gravity and voltage (SG&V) and temperature testing of battery pilot cells. Pilot cells are 10% of the total cells in the battery. Brunner Island's plant-specific program required SG&V and temperature testing of all battery cells only on a quarterly basis. Therefore, although Brunner Island**

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<sup>6</sup> Consistent with applicable FERC precedent, the term 'Regional Reliability Organization' in this context refers to ReliabilityFirst.

performed these specific battery tests on 100% of the batteries on a quarterly basis, it did not test battery pilot cells on a monthly basis as required by *EFHI 4.201*. The Brunner Island plant-specific program also required testing of battery connections on a quarterly basis. Brunner Island performed five of eight quarterly tests from June 2007 to July 2009. In 2007, Brunner Island performed testing in the second and third quarters, but did not perform this test in the fourth quarter. Additionally, in 2008, Brunner Island performed these tests only twice rather than in each quarter. However, Brunner Island was performing other general battery checks as part of its operators' daily rounds. In total, Brunner Island's violation affected all five batteries within the scope of PRC-005-1 R2 and of its 717 Protection System devices.

**LMBE—RFC200900159**

Both *EFHI 4.201* and the LMBE plant-specific program required monthly inspections of battery charger voltage, SG&V testing of pilot cells, electrolyte level inspections and sample temperature testing. LMBE missed one of these monthly tests in August 2007. However, LMBE was performing other general battery checks as part of its operators' daily rounds. In total, LMBE's violation affected two of four batteries within the scope of PRC-005-1 R2 and of its 172 Protection System devices.

**Holtwood—RFC200900160**

*EFHI 4.201* requires monthly SG&V and temperature testing of pilot cells. The Holtwood plant-specific program, however, required only semi-annual SG&V and temperature testing of all battery cells. Therefore, Holtwood did not perform monthly SG&V and temperatures testing of pilot cells. *EFHI* also required annual inspection of connections and ambient temperature testing, which Holtwood performed twice per year, starting in 2008. Holtwood did not perform this inspection in 2007. However, Holtwood was performing other general battery checks as part of its operators' rounds. In total, Holtwood's violation affected the only battery within the scope of PRC-005-1 R2 and of its 528 Protection System devices.

**Martins Creek—RFC200900161**

Martins Creek includes two oil and/or gas fired steam generating units and four CTGs that meet the NERC registry criteria. *EFHI 4.201* requires monthly inspections of charger voltage, SG&V testing of pilot cells, electrolyte level inspections and sample temperature testing for lead-acid batteries. Martins Creek has a total of three batteries within the scope of PRC-005-1 for the steam plant and the CTGs. Martins Creek deferred these monthly tests for the batteries as follows: two months in 2007 and four months in 2008 for Protection System battery #1; two months in 2007 and five months in 2008 for Protection System battery #2; and three months in 2007 and four months in 2008 for Protection System battery #3. However, Martins Creek was performing charger voltage checks, electrolyte level inspections and visual inspections during daily operator rounds. *EFHI 4.201* versions in effect during the relevant period provided guidelines for only lead-acid



**III. DISCOVERY INFORMATION**

METHOD OF DISCOVERY

- SELF-REPORT
- SELF-CERTIFICATION
- COMPLIANCE AUDIT
- COMPLIANCE VIOLATION INVESTIGATION
- SPOT CHECK
- COMPLAINT
- PERIODIC DATA SUBMITTAL
- EXCEPTION REPORTING

DURATION DATE(S) **6/18/07 (when the Standards became mandatory and enforceable) through 12/15/09 (Mitigation Plan completion)**

DATE DISCOVERED BY OR REPORTED TO REGIONAL ENTITY **7/22/09**

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

**IV. MITIGATION INFORMATION**

FOR FINAL ACCEPTED MITIGATION PLAN:

MITIGATION PLAN NO. **MIT-07-2139**  
 DATE SUBMITTED TO REGIONAL ENTITY **11/12/09**  
 DATE ACCEPTED BY REGIONAL ENTITY **11/16/09**  
 DATE APPROVED BY NERC **12/04/09**  
 DATE PROVIDED TO FERC **12/04/09**

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

**NONE**

MITIGATION PLAN COMPLETED YES  NO

EXPECTED COMPLETION DATE **12/15/09**  
 EXTENSIONS GRANTED **N/A**  
 ACTUAL COMPLETION DATE **12/15/09**

DATE OF CERTIFICATION LETTER **12/15/09**  
 CERTIFIED COMPLETE BY REGISTERED ENTITY AS OF **12/15/09**

DATE OF VERIFICATION LETTER **7/29/09**  
VERIFIED COMPLETE BY REGIONAL ENTITY AS OF **12/15/09**

ACTIONS TAKEN TO MITIGATE THE ISSUE AND PREVENT  
RECURRENCE

**PPL Generation outlined the following actions to mitigate the violations:**

- D.1.1 Initial Training/Communications**
- D.1.2 NERC Awareness Video Presentations**
- D.1.3 Revise EFHI 4.201**
- D.1.4 Root Cause Analysis**
  - D.1.4.a Employee NERC Orientation Program**
  - D.1.4.b EFHI Audit System**
- D.1.5 NERC Equipment Identification**
- D.1.6 New NERC Battery Test & Maintenance Procedure**

**The mitigating actions proposed, taken and confirmed are discussed in detail below in the List of Evidence section.**

**In order to prevent recurrence, the procedural changes ensured that each of the reporting registered entities works toward an approved testing and maintenance program that allows judgment to defer routine activities based on equipment condition. The training emphasized to personnel the importance of following testing and maintenance programs and preparing adequate documentation to demonstrate compliance. The changes to the work management system aid personnel in identifying the required work for equipment covered by NERC Standard PRC-005-1.**

LIST OF EVIDENCE REVIEWED BY REGIONAL ENTITY TO EVALUATE  
COMPLETION OF MITIGATION PLAN

***Summary of Battery Maintenance* (provided for all EFH Plants), June 2007 – July 2009, dated June 7, 2009. These summaries identified the batteries in service at the EFH Plants at the time of the Self-Report. These summaries also stated when each battery was last maintained and tested and show that as of December 15, 2009, all batteries in service at the EFH Plants were maintained and tested in accordance with the intervals provided in PPL Generation's Protection System maintenance and testing plan. These tests were necessary to demonstrate compliance to PRC-005-1 R2.1.**

**The Mitigation Plan further stated that PPL Generation would take a number of steps, D1.1 through D1.6, and the evidence demonstrating completion of these steps is discussed below:**

**To address D.1.1, PPL Generation management discussed the details of each EFH Plant's failure to meet all of the battery testing intervals with appropriate personnel to highlight the need for strict adherence to testing**

**and maintenance programs for equipment important to the reliability of the BPS. Plant personnel were directed to perform all battery testing and maintenance activities for equipment subject to PRC-005-1 in accordance with current written plant procedures until *EFHI 4.201* was revised to include the previously unwritten practice that allows battery maintenance and testing to be deferred one cycle.**

**ReliabilityFirst verified this action as complete by reviewing the *Agenda for Eastern Fossil & Hydro (EFH) Group Staff Meeting* held April 15, 2009.**

**The PPL Generation Compliance Committee members also discussed this event to share lessons learned across the PPL Generation fleet. These work group discussions emphasized the importance of performing routine testing and maintenance activities for equipment important to the reliability of the BPS.**

**ReliabilityFirst verified this action as complete by reviewing the *Agenda for Compliance Committee Meeting* held April 23, 2009.**

**To address D1.2, PPL Generation developed a NERC awareness video to be presented to applicable employees. The training was provided to employees as appropriate based on job function. Employees were trained by the end of the third quarter 2009. This training emphasized the importance of performing routine testing and maintenance activities for equipment important to the reliability of the BPS. ReliabilityFirst verified this activity as complete by reviewing PPL Generation's NERC Electric Reliability Standards awareness video and *NERC Awareness Training 2009* brochure and the roster of 1,102 employees who viewed the video between April 15, 2009 and September 30, 2009.**

**To address D.1.3, PPL Generation updated its battery testing and maintenance procedure, *Maintenance of Station Battery Systems, Eastern Fossil & Hydro Instruction (EFHI) 4.201, Revision 4*, dated June 4, 2009 and effective August 1, 2009, to document a previously unwritten policy allowing supervisors to exercise judgment and defer one cycle of periodic battery tests based upon the results of recent maintenance and testing records. This change recognized that routine testing activities can be deferred by one cycle without adverse impact to the reliability of the equipment and ensures that the plants are working to a defined program. As a result of the changes in *EFHI 4.201*, the EFH Plants' battery maintenance and testing activities became fully compliant with the documented program and the requirements of PRC-005-1.**

**To address, D.1.4, a Root Cause Analysis (RCA) was undertaken to determine why the EFH Plants' battery maintenance programs deviated from *EFHI 4.201*.**

ReliabilityFirst verified this activity as complete by reviewing the RCA, dated September 15, 2009. The RCA included four recommended actions:

- a. The Generation Technical Services (GTS) group within PPL Generation should clearly define if *EFHI 4.201* is a guideline or an instruction that shall be followed by all plants to be in compliance with Reliability Standards. This suggestion was addressed through the changes to *EFHI 4.201* discussed above.
- b. GTS should have a clear and effective means of ensuring that PPL Generation plant management is aware of the *EFHI 4.201* requirements. See Mitigation Plan Section D.1.4.a, discussed below.
- c. GTS should update *EFHI 4.201* to incorporate the equipment and processes in all PPL Generation plants. Some of the batteries installed at the new plants were not covered in *EFHI 4.201*. This suggestion was addressed through the creation of a new procedure, *Maintenance of NERC Station Battery Systems, EFHI 10.04.01, Revision 0*, dated September 25, 2009 and effective September 30, 2009; and
- d. GTS should establish an audit system for monitoring compliance with *EFHI 4.201*. Maintenance documentation needs to be such that compliance with *EFHI 4.201* can be determined. See Mitigation Plan Section D.1.4.b, discussed below.

To address D.1.4.a, PPL Generation developed an employee orientation program that included the discussion of PPL Generation's NERC Compliance Program and the documents and procedures used to maintain compliance with applicable Standards. This orientation program is administered to new employees, employees new to certain plant responsibilities including operation, maintenance, work control, or plant management and to employees of acquired plants.

ReliabilityFirst verified this action as complete by reviewing the updated NERC Electric Reliability Standards awareness video, discussed above. This video includes discussions emphasizing appropriate procedure use and locations for procedures. This video also highlights the role of procedures in meeting NERC compliance.

To address D.1.4.b, PPL Generation developed an audit process to verify conformance with its internal procedures established to ensure compliance with NERC Reliability Standards.

ReliabilityFirst verified this action as complete by reviewing screenshots from PPL Generation's auditing software, dated October 28, 2009 through December 13, 2009. This software is a work and action tracking program tracking NERC compliance. Two new recurring tasks are now tracked by this software to provide routine verification that battery maintenance activities are performed. PPL Generation verifies that plants are performing these tasks.

To address D.1.5, PPL Generation enhanced its work management system to identify work orders related to batteries subject to PRC-005-1. This system will notify personnel that testing and maintenance activities associated with these batteries may require additional documentation to ensure that PPL Generation can show compliance on behalf of its affiliated registered entities.

ReliabilityFirst verified this action as complete by reviewing screenshots from PPL Generation's work management system.

To address D.1.6, PPL Generation issued a separate procedure for batteries subject to compliance with PRC-005-1, providing additional instructions for batteries. The additional procedure emphasizes the importance of completing the actions of the procedure exactly with precise documentation. The requirements reflected in the revised procedure meet or exceed the guidance provided in NERC's *Protection System Maintenance, A Technical Reference* dated September 13, 2007.

ReliabilityFirst verified this action as complete by reviewing *Maintenance of NERC Station Battery Systems, EFHI 10.04.01, Revision 0*, dated September 25, 2009, and effective September 30, 2009.

## V. PENALTY INFORMATION

TOTAL ASSESSED PENALTY OR SANCTION OF **TWENTY FIVE THOUSAND DOLLARS (\$25,000)** FOR **FIVE VIOLATIONS** OF RELIABILITY STANDARDS.

### (1) REGISTERED ENTITY'S COMPLIANCE HISTORY

PRIOR VIOLATIONS OF ANY OF THE INSTANT RELIABILITY STANDARD(S) OR REQUIREMENT(S) THEREUNDER  
 YES  NO

LIST ANY CONFIRMED OR SETTLED VIOLATIONS AND STATUS  
**An NOCV covering a violation of PRC-005-1 R2.1 for PPL Montana, LLC (PPLM), an indirect subsidiary of PPL Generation, was filed with FERC under NP10-57-000 on March 1, 2010. On March 31, 2010, FERC issued an order stating it would not engage in further review of the Notice of Penalty.**

**A Settlement Agreement covering a violation of PRC-005-1 R2.1, among other unrelated violations, for PPL Electric Utilities, a sister company of PPL Generation, was filed with FERC under NP10-71-000 on March 31, 2010. On April 30, 2010, FERC issued an order stating it would not engage in further review of the Notice of Penalty.**

## ADDITIONAL COMMENTS

**ReliabilityFirst did not consider these prior violations as an aggravating factor in determining the penalty for the instant violations; rather, ReliabilityFirst determined that PPL Generation discovered the prior violations and the instant violations while performing a thorough review of its system, and that, therefore, all these violations were discovered contemporaneously. ReliabilityFirst determined that the initiation of this thorough review demonstrated a strong culture of compliance.**

## PRIOR VIOLATIONS OF OTHER RELIABILITY STANDARD(S) OR REQUIREMENTS THEREUNDER

YES  NO

## LIST ANY PRIOR CONFIRMED OR SETTLED VIOLATIONS AND STATUS

**An NOCV covering a violation of VAR-002-1 R3 for PPL Montana, LLC (PPLM), an indirect subsidiary of PPL Generation, was filed with FERC under NP10-59-000 on March 1, 2010. On March 31, 2010, FERC issued an order stating it would not engage in further review of the Notice of Penalty.**

## ADDITIONAL COMMENTS

**ReliabilityFirst did not consider these prior violations as an aggravating factor in determining the penalty for the instant violations; rather, ReliabilityFirst determined that PPL Generation discovered the prior violations and the instant violations while performing a thorough review of its system, and that, therefore, all these violations were discovered contemporaneously. ReliabilityFirst determined that the initiation of this thorough review demonstrated a strong culture of compliance.**

(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  UNDETERMINED   
EXPLAIN

**The EFH Plants are indirect subsidiaries of PPL Corporation. PPL Corporation developed and implemented the *PPL NERC Compliance Program* designed to ensure that all its subsidiaries comply with NERC Reliability Standards. ReliabilityFirst reviewed the second revised *PPL NERC Compliance Program*, effective December 3, 2008. ReliabilityFirst commends certain aspects of this program and considered it a mitigating factor in determining the penalty. For instance, this program is made available to PPL Corporation and subsidiary employees through a variety of channels.**

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.

**PPL Corporation's senior management team supports and participates in NERC Reliability Standard compliance matters. Members of PPL Corporation management participate in an internal Compliance Oversight Group, which meets regularly to address compliance-related matters. On a periodic basis, these meetings include sessions to discuss NERC-related compliance matters with the Senior Director – NERC Compliance and other personnel responsible for NERC compliance. Members of the Compliance Oversight Group include PPL Corporation's Senior Director of Business Ethics/Compliance, the Executive Director of Corporate Audit Services, and the Chief Compliance Officer. The Senior Vice President, General Counsel and Secretary of PPL Corporation is the Chief Compliance Officer and has a direct line of communication with PPL Corporation's Chief Executive Officer.**

(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

EXHIBITS:

SOURCE DOCUMENT

**PPL Generation's Self-Report dated July 22, 2009**

MITIGATION PLAN

**PPL Generation's Mitigation Plan MIT-07-2139 submitted November 12, 2009**

CERTIFICATION BY REGISTERED ENTITY

**PPL Generation's Certification of Mitigation Plan Completion dated December 15, 2009**

VERIFICATION BY REGIONAL ENTITY

**ReliabilityFirst's Verification of Mitigation Plan Completion dated July 29, 2010**

OTHER RELEVANT INFORMATION:

NOTICE OF ALLEGED VIOLATION AND PROPOSED PENALTY OR  
SANCTION ISSUED

DATE: OR N/A

SETTLEMENT DISCUSSIONS COMMENCED

DATE: **7/16/10** 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

**Attachment c**

**Notice of Filing**

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

PPL Brunner Island, L.L.C.  
Lower Mount Bethel Energy, LLC  
PPL Holtwood, L.L.C.  
PPL Martins Creek, L.L.C.  
PPL Montour, L.L.C.

Docket No. NP11-\_\_\_\_-000

NOTICE OF FILING  
December 22, 2010

Take notice that on December 22, 2010, the North American Electric Reliability Corporation (NERC) filed a Notice of Penalty regarding PPL Brunner Island, LLC, Lower Mount Bethel Energy, LLC, PPL Holtwood, LLC, PPL Martins Creek, LLC, and PPL Montour, LLC in the Reliability *First* 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](mailto:FERCOnlineSupport@ferc.gov), or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

Comment Date: [BLANK]

Kimberly D. Bose,  
Secretary