

September 29, 2022

VIA ELECTRONIC FILING

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

Re: **NERC Full Notice of Penalty regarding National Grid USA,
FERC Docket No. NP22-_-000**

Dear Ms. Bose:

The North American Electric Reliability Corporation (NERC) hereby provides this Notice of Penalty¹ regarding National Grid USA (NGUSA), and referred to herein as the Entity, NERC Registry ID# NCR11171,² in accordance with the Federal Energy Regulatory Commission's (Commission or FERC) rules, regulations, and orders, as well as NERC's Rules of Procedure including Appendix 4C (NERC Compliance Monitoring and Enforcement Program (CMEP)).³

NERC is filing this Notice of Penalty, with information and details regarding the nature and resolution of the violations,⁴ with the Commission because Northeast Power Coordinating Council, Inc. (NPCC) and the Entity have entered into a Settlement Agreement to resolve all outstanding issues arising from NPCC's determination and findings of the violations of the Operations and Planning Reliability Standards listed below.

¹ *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, 114 FERC ¶ 61,104, order on reh'g, Order No. 672-A, 114 FERC ¶ 61,328 (2006); *Notice of New Docket Prefix "NP" for Notices of Penalty Filed by the N. Am. Elec. Reliability Corp.*, Docket No. RM05-30-000 (February 7, 2008); *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, 118 FERC ¶ 61,218, order on reh'g, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

² The Entity was included on the NERC Compliance Registry as a Distribution Provider (DP), Transmission Owner (TO), Transmission Planner (TP), and Transmission Service Provider (TSP) on June 21, 2007.

³ See 18 C.F.R § 39.7(c)(2) and 18 C.F.R § 39.7(d).

⁴ 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.

**1401 H Street NW Suite 410
Washington, DC 20005
202-400-3000 | www.nerc.com**

NERC Notice of Penalty
National Grid USA
September 29, 2022
Page 2

According to the Settlement Agreement, the Entity admits the facts described in the settlement constitute violations of NERC Reliability Standard requirements and has agreed to the assessed penalty of five hundred twelve thousand dollars (\$512,000), in addition to other remedies and actions to mitigate the violations and facilitate future compliance under the terms and conditions of the Settlement Agreement.

Statement of Findings Underlying the Violations

This Notice of Penalty incorporates the findings and justifications set forth in the Settlement Agreement, by and between NPCC and the Entity. The details of the findings and basis for the penalty are set forth in the Settlement Agreement and herein.

In accordance with Section 39.7 of the Commission's regulations, 18 C.F.R. § 39.7 (2022), NERC provides the following summary table identifying each violation of a Reliability Standard resolved by the Settlement Agreement. Further information on the subject violations is set forth in the Settlement Agreement and herein.

Violation(s) Determined and Discovery Method								
*SR = Self-Report / SC = Self-Certification / CA = Compliance Audit / SPC = Spot Check / CI = Compliance Investigation								
NERC Violation ID	Standard	Req.	VRF/VSL	Applicable Function(s)	Discovery Method* & Date	Violation Start-End Date	Risk	Penalty Amount
NPCC2020023725	FAC-008-3	R6	Medium/High	TO	SR; 7/20/20	6/18/07 to 4/18/25	Serious	\$512k
NPCC2020023141	FAC-008-3	R8	Medium/Severe	TO	SR; 4/2/20	6/18/07 to 4/18/25	Serious	
NPCC2019021964	PRC-023-4	R1	High/Severe	TO	SR; 7/31/19	7/1/10 to 9/28/21	Moderate	

Information About the Entity

NGUSA is headquartered in Waltham, Massachusetts and owns approximately 8,900 miles of transmission lines, 387 substations, and 122,000 miles of distribution lines serving approximately 3 million electricity customers in New York and Massachusetts. NGUSA also owns approximately 134 miles of the asynchronous tie line between New England and the Quebec Interconnection. NGUSA has a peak load in New England of approximately 6,400 MW and a peak load in New York of approximately 7,017 MW.

Executive Summary

NERC Notice of Penalty
National Grid USA
September 29, 2022
Page 3

The Entity self-reported two related violations of FAC-008-3 and one violation of PRC-023-4. The Entity discovered the FAC-008-3 violations while preparing for an annual planning assessment and a related project, and then performed an extent of condition (EOC) review. The Entity found 100 Facilities with incorrect and inconsistent Facility Ratings; 154 Facilities with inaccurate Facility Ratings and identities of the most limiting equipment (MLE) of the Facility; and 16 protective relay settings affecting 13 transmission lines with incorrect settings.

The Entity's ongoing mitigation is designed to better identify roles and responsibilities, improve coordination and communication between departments, update procedures, and provide enhanced and repetitive Facility Ratings training and relay loadability training.

FAC-008-3 R6

NPCC determined that the Entity did not maintain accurate Facility Ratings consistent with its Facility Ratings Methodology at Facilities used for the planning and operation of the Bulk Power System (BPS) by NGUSA in New York and New England. The Entity conducted an extent of condition review and discovered a total of 100 Facilities with incorrect and inconsistent Facility Ratings. More than 30% of the Facilities had incorrect ratings for all six applicable ratings (Normal, Long Term Emergency (LTE), Short Term Emergency (STE) for summer and winter). Ratings reductions ranged from less than 4% to 70%, and affected 21 Facilities. In addition, thirteen Facilities were associated with an Interconnection Reliability Operating Limit (IROL), with two requiring rating decreases and 11 requiring rating increases. Further, during the past three years, five circuits experienced loadings in real-time operations that exceeded the previous incorrect Facility Ratings, and the largest overload exceeded the STE rating for both the incorrect and correct Facility Rating. Attachment 1 includes additional facts regarding the violation.

The cause of this violation was ineffective interdepartmental coordination or silos between departments, and contributing causes included insufficient communication, gaps in procedures, insufficient training, and lack of controls.

NPCC determined that this violation posed a serious or substantial risk to the reliability of the BPS. Attachment 1 includes the facts regarding the violation that NPCC considered in its risk assessment.

The Entity submitted its Mitigation Plan to address the referenced violation, with an expected completion date of April 30, 2025. Attachment 1 includes a description of the mitigation activities the Entity has taken or will take to address this violation. A copy of the Mitigation Plan is included as Attachment 3.

NERC Notice of Penalty
National Grid USA
September 29, 2022
Page 4

FAC-008-3 R8

NPCC determined that the Entity did not provide to its Reliability Coordinator accurate Facility Ratings or the accurate identity of the most limiting element of the Facility for a total of 154 Facilities (or 21% of the Entity's Facilities in scope of the Standard). Of the 154 Facilities, 100 Facilities were included in the violation of R6 but had either correct MLEs and incorrect Facility Ratings, or both incorrect MLEs and Facility Ratings. One-third of the Facilities had incorrect MLEs but correct Facility Ratings. In addition, several Facilities had correct MLEs and Facility Ratings, but lacked clear MLE identifiers. Attachment 1 includes additional facts regarding the violation.

The cause of this violation was ineffective interdepartmental coordination or silos between departments, and contributing causes included insufficient communication, a failure to identify or understand roles and responsibilities, gaps in procedures, insufficient training, and lack of controls.

NPCC determined that this violation posed a serious or substantial risk to the reliability of the BPS. Attachment 1 includes the facts regarding the violation that NPCC considered in its risk assessment.

The Entity submitted its Mitigation Plan to address the referenced violation, with an expected completion date of April 30, 2025. Attachment 1 includes a description of the mitigation activities the Entity has taken or will take to address this violation. A copy of the Mitigation Plan is included as Attachment 5.

PRC-023-4 R1

NPCC determined that the Entity had 16 protective relay settings affecting 13 transmission lines, seven of which were 345 kV feeders and eight were part of an IROL, which did not meet various Criteria specified in PRC-023-4 R1. Collectively, the noncompliant relays reduced the Winter Long Term Emergency (LTE) rating of the affected feeders by over 7,500 MVA. Attachment 1 includes additional facts regarding the violation.

The cause of this violation was ineffective interdepartmental coordination or silos between departments, and contributing causes included insufficient communication, gaps in procedures, insufficient training, and failure to recognize the loadability impact of limiting transformers installed in series with applicable feeders on protection relays' settings.

NPCC determined that this violation posed a moderate and not serious or substantial risk to the reliability of the BPS. Attachment 1 includes the facts regarding the violation that NPCC considered in its risk assessment.

NERC Notice of Penalty
National Grid USA
September 29, 2022
Page 5

The Entity submitted its Mitigation Plan to address the referenced violation, with an expected completion date of April 30, 2025. Attachment 1 includes a description of the mitigation activities the Entity has taken or will take to address this violation. A copy of the Mitigation Plan is included as Attachment 7.

Regional Entity's Basis for Penalty

According to the Settlement Agreement, NPCC has assessed a penalty of five hundred twelve thousand dollars (\$512,000) for the referenced violations. In reaching this determination, NPCC considered the following factors:

1. The violations of FAC-008-3 posed a serious or substantial risk, and the violation of PRC-023-04 posed a moderate risk to the reliability of the BPS, as discussed in Attachment 1;
2. NPCC determined the compliance history for the FAC-008-3 violations should not serve as an aggravating factor for the reasons detailed in Attachment 1;⁵
3. The FAC-008-3 violations were both based on the same facts and circumstances, and had the same root cause;
4. The Entity self-reported the violations;
5. The Entity was cooperative throughout the compliance enforcement process; and
6. There were no other mitigating or aggravating factors or extenuating circumstances that would affect the assessed penalty/disposition method.

After consideration of the above factors, NPCC determined that, in this instance, the penalty amount of five hundred twelve thousand dollars (\$512,000) is appropriate and bears a reasonable relation to the seriousness and duration of the violations.

Statement Describing the Assessed Penalty, Sanction, or Enforcement Action Imposed⁶

Basis for Determination

⁵ The Entity's relevant prior noncompliance with FAC-008-3 R8 include(s): NERC Violation IDs NPCC2017018714 and NPCC2017016878.

⁶ See 18 C.F.R. § 39.7(d)(4).

NERC Notice of Penalty
National Grid USA
September 29, 2022
Page 6

Taking into consideration the Commission's direction in Order No. 693, the NERC Sanction Guidelines and the Commission's July 3, 2008, October 26, 2009 and August 27, 2010 Guidance Orders,⁷ NERC Enforcement staff reviewed the applicable requirements of the violations at issue, and considered the factors listed above.

For the foregoing reasons, NERC Enforcement staff approved the resolution between NPCC and the Entity and believes that the assessed penalty of five hundred twelve thousand dollars (\$512,000) is appropriate for the violations and circumstances at issue, and is consistent with NERC's goal to promote and ensure reliability of the BPS.

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

Attachments to be Included as Part of this Notice of Penalty

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

1. Settlement Agreement by and between NPCC and the Entity executed June 30, 2022, included as Attachment 1;
2. The Entity's Self-Report for FAC-008-3 R6 dated July 20, 2020, included as Attachment 2;
3. The Entity's Mitigation Plan designated as NPCCMIT015699 for FAC-008-3 R6 submitted May 12, 2022, included as Attachment 3;
4. The Entity's Self-Report for FAC-008-3 R8 dated April 2, 2020, included as Attachment 4;
5. The Entity's Mitigation Plan designated as NPCCMIT015698 for FAC-008-3 R8 submitted May 12, 2022, included as Attachment 5;
6. The Entity's Self-Report for PRC-023-4 R1 received July 31, 2019, included as Attachment 6; and
7. The Entity's Mitigation Plan designated as NPCCMIT015700 for PRC-023-4 R1 submitted May 12, 2022, included as Attachment 7.

⁷ N. Am. Elec. Reliability Corp., "Guidance Order on Reliability Notices of Penalty," 124 FERC ¶ 61,015 (2008); N. Am. Elec. Reliability Corp., "Further Guidance Order on Reliability Notices of Penalty," 129 FERC ¶ 61,069 (2009); N. Am. Elec. Reliability Corp., "Notice of No Further Review and Guidance Order," 132 FERC ¶ 61,182 (2010).

NERC Notice of Penalty
National Grid USA
September 29, 2022
Page 7

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

<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>Northeast Power Coordinating Council, Inc. 1040 Avenue of the Americas, 10th Floor New York, NY 10018-3703</p> <p>Damase Hebert* Associate General Counsel & Director, Enforcement (212) 840-1070 dhebert@npcc.org</p> <p>Arthur Brown* Enforcement Attorney (212) 840-1070 abrown@npcc.org</p> <p>Keri Sweet Zavaglia* Senior Vice President & General Counsel National Grid USA 300 Erie Blvd W. Syracuse, NY 13202 Keri.Sweet-Zavaglia@nationalgrid.com</p> <p>National Grid USA 40 Sylvan Road Waltham, MA 02451</p> <p>Elizabeth Spivak* Manager – Reliability Compliance</p>	<p>Teresina Stasko* Assistant General Counsel and Director of Enforcement North American Electric Reliability Corporation 1401 H Street NW, Suite 410 Washington, DC 20005 (202) 400-3000 (202) 644-8099 – facsimile teresina.stasko@nerc.net</p> <p>James McGrane* Senior Counsel North American Electric Reliability Corporation 1401 H Street NW, Suite 410 Washington, DC 20005 (202) 400-3000 (202) 644-8099 – facsimile james.mcgrane@nerc.net</p> <p>Caelyn Palmer* Associate Counsel North American Electric Reliability Corporation 1401 H Street NW, Suite 410 Washington, DC 20005 (202) 400-3000 (202) 644-8099 – facsimile caelyn.palmer@nerc.net</p>
---	--

NERC Notice of Penalty
National Grid USA
September 29, 2022
Page 8

Elizabeth.Spivak@nationalgrid.com Chris Novak* Senior Counsel chris.novak@nationalgrid.com Lisa Codere-Lopez* Lead Analyst – Work Order Controls Lisa.Codere-Lopez@nationalgrid.com Jacqueline Ryan* Analyst – Reliability Compliance Jacqueline.Ryan@nationalgrid.com	
---	--

NERC Notice of Penalty
National Grid USA
September 29, 2022
Page 9

Conclusion

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

Respectfully submitted,

/s/ Caelyn Palmer

James McGrane
Senior Counsel
Caelyn Palmer
Associate Counsel
North American Electric Reliability
Corporation
1401 H Street NW, Suite 410
Washington, DC 20005
(202) 400-3000
(202) 644-8099 - facsimile
james.mcgrane@nerc.net
caelyn.palmer@nerc.net

cc: National Grid USA
Northeast Power Coordinating Council, Inc.

Attachments

Attachment 1
Settlement Agreement by and between NPCC and NGUSA
Executed June 30, 2022

In re: National Grid USA

NERC Registry ID No. NCR11171

) **Violation ID Nos.:**

) NPCC2020023725 (FAC-008-3 R6)

) NPCC2020023141 (FAC-008-3 R8)

) NPCC2019021964 (PRC-023-4 R1)

**SETTLEMENT AGREEMENT
OF
NORTHEAST POWER COORDINATING COUNCIL, INC.
AND
NATIONAL GRID USA**

I. INTRODUCTION

1. Northeast Power Coordinating Council, Inc. (“NPCC”) and National Grid USA (“NGUSA”) (collectively, the “Parties”) enter into this Settlement Agreement (“Agreement”) to resolve violations by NGUSA of the above-captioned Reliability Standards and Requirements.¹
2. The Parties stipulate to the facts in this Agreement for the sole purpose of resolving the violations and do not constitute stipulations or admissions for any other purpose. NGUSA admits that these facts constitute violations of the above-captioned Reliability Standards and Requirements and agrees to the proposed penalty of \$512,000 in addition to other remedies and actions to mitigate the instant violations and to ensure future compliance under the terms and conditions of this Agreement. NGUSA agrees to enter into this Agreement with NPCC to avoid extended litigation with respect to the matters described or referred to herein, to avoid uncertainty, and to effectuate a complete and final resolution of the issues set forth herein. NGUSA agrees this Agreement is in the best interest of the Parties and in the best interest of Bulk Power System (BPS) reliability.

II. OVERVIEW OF NGUSA

3. NGUSA is headquartered in Waltham, Massachusetts and owns approximately 8,900 miles of transmission lines, 387 substations, and 122,000 miles of distribution lines serving approximately 3 million electricity customers in New York and Massachusetts, and previously 500,000 in Rhode Island.² NGUSA also owns approximately 134 miles of the asynchronous tie line between New England and the Quebec Interconnection. NGUSA has a peak load in New England of approximately 6,400 MW and a peak load in New York of approximately

¹ This Settlement Agreement references the version of the Reliability Standard in effect at the time each violation was discovered and self-reported.

² NGUSA’s operations in Rhode Island were through its direct, wholly-owned subsidiary, Narragansett Electric Company (“NECO”). NECO and PPL Corporation filed a joint application under section 203 of the Federal Power Act requesting authorization for an acquisition transaction in which NECO will become a wholly-owned, indirect subsidiary of PPL Corporation. FERC approved the application and the closing of the transaction occurred on May 25, 2022. NECO is no longer affiliated with National Grid USA or any National Grid USA energy affiliates or energy subsidiaries. See *PPL Corporation & The Narragansett Electric Company, Order Authorizing Disposition of Jurisdictional Facilities*, 176 FERC ¶ 61,175 (September 23, 2021).

7,017 MW. NGUSA's Transmission Operations (TOP) functions are performed in New York by its subsidiary Niagara Mohawk Power Corporation (NCR07163) and in New England by its subsidiary New England Power Company (NCR07159.) Another subsidiary, National Grid Generation (NCR07128) performs Generation Owner (GO) and Generator Operator (GOP) functions for approximately 50 fossil fuel-powered generation stations on Long Island, New York. NGUSA's ultimate corporate parent is National Grid plc, with headquarters in London, England.

4. NGUSA is registered on the NERC Compliance Registry as a Distribution Provider (DP), Transmission Owner (TO), Transmission Planner (TP), and Transmission Service Provider (TSP) in the NPCC region. NGUSA, in its capacity as a TO, is subject to compliance with the above captioned Reliability Standards and Requirements.

III. EXECUTIVE SUMMARY

5. This Settlement Agreement resolves two related violations of the FAC-008-3, Facility Ratings Reliability Standard and one violation of PRC-023-4, Transmission Relay Loadability. The FAC-008-3 violations posed a serious risk to the reliability of the BPS, while the PRC-023-4 violation posed a moderate risk to the reliability of the BPS. All three violations were self-identified by NGUSA.
6. NGUSA discovered the FAC-008-3 violations during preparations for its annual TPL-001-4 planning assessment and another related project and after discovery, performed an extent of condition review. NGUSA had 100 Facilities with Facility Ratings that were used in the planning and operation of the BPS that were incorrect and inconsistent with its Facility Rating Methodology (FRM). NGUSA also had 154 Facilities in which NGUSA did not provide either ISO-NE or NYISO with accurate Facility Ratings or the accurate identity of the most limiting equipment (MLE) of the Facility. The duration and scope of the issues exacerbated the risk, as they evidenced a programmatic failure. The violations involved ineffective interdepartmental coordination or silos between departments. NGUSA's mitigation for the FAC-008 violations is designed to better identify roles and responsibilities, improve coordination and communication between departments, update procedures, and provide enhanced and repetitive Facility Ratings training.
7. NGUSA notified NPCC, after an extent of condition review, that 16 protective relay settings affecting 13 transmission lines did not meet the PRC-023-4 Criterion for relay loadability. The incorrect settings increase the risk that transmission would trip prematurely, thus limiting the System Operator's ability to take remedial action while protecting transmission equipment. The duration of the violation exacerbated the risk. The violation involved ineffective interdepartmental coordination or silos between departments and insufficient training. NGUSA's mitigation for PRC-023-4, R1 is designed to better identify roles and responsibilities, improve coordination and communication between departments, update procedures, and provide enhanced and repetitive relay loadability training.
8. NPCC determined that a penalty is appropriate in this case because of the serious risk of the FAC-008 violations, which involved programmatic issues.

IV. ADJUSTMENT FACTORS

9. In addition to the facts and circumstances stated above, NPCC considered the following factors in its penalty determination.

Self-Identification and Self-Reporting

10. NGUSA self-identified all three violations described in this Settlement Agreement prior to detection or intervention by NPCC. Effective oversight of the reliability of the BPS depends upon self-reporting by Registered Entities. NPCC seeks to encourage self-reporting of offenses and, therefore, is applying mitigating credit relating to violations NPCC20200237025 (FAC-008-3 R6); NPCC2020023141 (FAC-008-3 R8); and NPCC2019021964 (PRC-023-4 R1).

Cooperation

11. NGUSA has been cooperative throughout the entire enforcement process relating to these violations. Throughout the enforcement process, NGUSA voluntarily provided NPCC with information that was timely, detailed, thoughtful, organized, and thorough.

Compliance History

12. When assessing the penalty for the violations at issue in this Settlement Agreement, NPCC considered whether the facts of these violations constituted repetitive violations. NGUSA has had prior noncompliances of FAC-008. However, the prior noncompliances were minimal risk, had different root causes and mitigation of those noncompliances would not have prevented these violations. NGUSA did not have relevant prior instances of noncompliance with PRC-023-4. Therefore, NPCC did not aggravate the penalty amount.

V. PENALTY

13. Based upon the foregoing, NGUSA shall pay a monetary penalty of \$512,000.00 to NPCC.
14. NPCC shall present an invoice to NGUSA after the Agreement is approved by the Federal Energy Regulatory Commission (Commission) or affirmed by operation of law. Upon receipt, NGUSA shall make a payment by the Required Date, which shall be 30 days from the receipt of the invoice. NPCC will notify NERC if it does not timely receive the payment from NGUSA.
15. If NGUSA does not remit the payment by the required date, interest payable to NPCC will begin to accrue pursuant to the Commission's regulations at 18 C.F.R. §35.19a(a)(2)(iii) from the date that payment is due, and shall be payable in addition to the payment.

VI. ADDITIONAL TERMS

16. The Parties agree that this Agreement is in the best interest of BPS reliability. The terms and conditions of the Agreement are consistent with the regulations and orders of the Commission and the NERC Rules of Procedure.
17. NPCC shall report the terms of all settlements of compliance matters in the United States to NERC. NERC will review the 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 the Agreement, NERC will provide specific written reasons for such rejection and NPCC will attempt to negotiate with NGUSA a revised settlement agreement that addresses NERC's concerns. If a settlement cannot be reached, the enforcement process will continue to conclusion. If NERC approves the 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 violations and the terms provided for in this Agreement.
18. This Agreement binds the Parties upon execution and may only be altered or amended by written agreement executed by the Parties. NGUSA expressly waives its right to any hearing or appeal concerning any matter set forth herein, unless and only to the extent that NGUSA contends that any NERC or Commission action constitutes a material modification to this Agreement.
19. NPCC reserves all rights to initiate enforcement action against NGUSA in accordance with the NERC Rules of Procedure in the event that NGUSA fails to comply with any of the terms or conditions of this Agreement. NGUSA retains all rights to defend against such action in accordance with the NERC Rules of Procedure.
20. NGUSA consents to NPCC's future use of 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 NGUSA's history of violations. Such use may be in any enforcement action or compliance proceeding undertaken by NERC or any Regional Entity or both, provided however that NGUSA does 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 does NGUSA consent to the use of this Agreement by any other party in any other action or proceeding.
21. The Parties affirm that all of the matters set forth in this Agreement are true and correct to the best of their knowledge, information, and belief, and that they understand that they enter into this Agreement in express reliance on the representations contained herein, as well as any other representations or information provided by the Parties to each other relating to the subject matter of this Agreement.

22. Upon execution of this Agreement, the Parties stipulate that each possible violation addressed herein constitutes a violation. The Parties further stipulate that all required, applicable information listed in Section 5.3 of the CMEP is included within this Agreement.
23. Each of the undersigned agreeing to and accepting this Agreement warrants that he or she is an authorized representative of the party designated below, is authorized to bind such party, and accepts the Agreement on the party's behalf.
24. The undersigned agreeing to and accepting this Agreement warrant 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 the Parties has been made to induce the signatories or any other party to enter into this Agreement.
25. This Agreement may be signed in counterparts.
26. This Agreement is executed in duplicate, each of which so executed shall be deemed to be an original.

[SIGNATURES ON FOLLOWING PAGE]³

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

³An electronic version of this executed document shall have the same force and effect as the original.

Agreed to and accepted:

Charles Dickerson

Charles Dickerson
President & CEO
Northeast Power Coordinating Council, Inc.

June 30, 2022

Date

Keri Sweet-Zavaglia

Keri Sweet-Zavaglia
Senior Vice President & US General Counsel
National Grid USA

June 28, 2022

Date

VII. VIOLATIONS

FAC-008-3 R6 (NPCC2020023725)

27. The purpose of FAC-008-3 is to ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on technically sound principles. A Facility Rating is essential for the determination of System Operating Limits.

28. FAC-008-3 R6 states:

R6. Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings. [Violation Risk Factor: Medium] [Time Horizon: Operations Planning]

Description of Violation

29. On July 20, 2020, NGUSA submitted a Self-Report stating that, as a Transmission Owner (TO), it was in noncompliance with FAC-008-3 R6. Specifically, during preparations for its annual TPL-001-4 planning assessment and another related project, NGUSA discovered on September 10, 2019 that six transmission Facilities did not have Facility Ratings used in the planning and operation of the BES that were consistent with its Facility Rating Methodology (FRM). Following the discovery, NGUSA performed an extent of condition review.

30. The extent of condition review consisted of comparing Facility Ratings for all 726 BES elements owned by National Grid USA between the PG-65 (Facility Ratings tool) and NX-9 (Facility Ratings database) in New England, and the Access Database and the NYISO Seasonal Ratings Spreadsheet in New York. Through the extent of condition review, NGUSA discovered 100 Facilities had Facility Ratings used in the planning and operation of the BPS that were incorrect and inconsistent with its FRM.

31. In the summer and fall of 2021, NGUSA conducted an asset baseline pilot consisting of field visits to verify field conditions at 20 substations across New England and New York. These field verifications included visual inspection and photographs of equipment nameplates, CT ratio tap settings, and bus conductor types. Equipment that could not be verified in the field were verified using station records. Verified data was then compared with the corresponding data in the Facility Ratings tool. NGUSA identified 16 instances in which the Facility Rating did not match the current field conditions. Of the 16, eight of the Facilities were already identified in the extent of condition review described in paragraph 30. Therefore, through this pilot, NGUSA discovered an additional eight Facilities that had Facility Ratings used in the planning and operation of the BPS that were incorrect and inconsistent with its FRM. As of

December 31, 2021, the total number of identified Facilities with incorrect Facility Ratings was 100.

32. NGUSA has two primary tools to identify and track Facility Ratings. In New England, Facility Ratings and MLEs are developed and tracked through a Fortran-based software program called Thermal Ratings Program for Transmission Line Circuits; PG-65.⁴ This program uses component information input into the program by the Transmission Planning and Asset Management departments (TPAM) to determine Facility Ratings. The output from PG-65 is then entered manually into the ISO-NE NX-9 Application by TPAM in accordance with ISO-NE's Operating Procedure 16 (OP-16) and related appendices. The ISO-NE NX-9 Application is the database for maintaining and communicating Facility Ratings in New England. The Facility Ratings entered into the NX-9 Application are used by ISO-NE as well as all Transmission Planners and Transmission Operators in New England for planning and operations.
33. In New York, Facility Ratings are developed and tracked through an Access Database.⁵ TPAM enters the component information and the Access Database calculates the Facility Ratings as well as the MLEs for line segments and overall lines. The Access Database also calculates the Facility Ratings and Most Limiting Element (MLE) summary for submission to the NYISO. Facility Ratings updates are submitted to the NYISO via a spreadsheet attached to an email, in the format of the NYISO Seasonal Operations Advisory Subcommittee (SOAS) Spreadsheet. The NYISO updates the SOAS Spreadsheet based on these Facility Ratings updates from NGUSA. The NGUSA New York control center uses the calculated Facility Ratings directly from the Access Database for operations.
34. NGUSA uses a normal, long term emergency (LTE), and short term emergency (STE) rating for the winter and for the summer for a total of six ratings for each Facility. Drastic Action Limit (DAL) ratings for the winter and summer are also used in New England for operations.
35. Incorrect Facility Ratings occurred in both New England and New York and began on a variety of different dates. Thirty-three (33) discrepancies began in 2007 or earlier.
36. NPCC determined that the duration of the noncompliance spans multiple versions of the Reliability Standard, as follows:

⁴ PG-65 calculates ratings for overhead lines and drops, bus conductors, air break and disconnect switches, circuit breakers, internal bushing current transformers, independent current transformers, air disconnect switches, and wave traps. PG-65 also handles, but does not directly calculate, thermal ratings for power transformers, underground cables and bus conductors without circular cross-sections. Using the calculations and external input, PG65 determines the most limiting element for each rating condition, i.e., normal, Long Term Emergency, Short Term Emergency, and Drastic Action Limit (DAL) ratings for winter and summer conditions.

⁵ In the Access Database, the thermal rating for most equipment categories is determined from look-up tables based on the Facility Ratings Methodology. Cable ratings are prepared by the Transmission Engineering Underground department. The Access tool identifies the most limiting element for each rating condition, i.e., normal, LTE, and STE for winter and summer conditions.

FAC-009-1 R1, from June 18, 2007 until December 31, 2012 (the standard's retirement date); and
 FAC-008-3 R6, from January 1, 2013 until September 30, 2016 (the standard's retirement date); and
 FAC-008-4 R6 from October 1, 2016 to date. The noncompliance is ongoing and will be mitigated when NGUSA can confirm its Facility Ratings used in planning and operations are consistent with NGUSA's Facility Rating Methodology. NPCC further determined that, for purposes of this noncompliance, there was no substantive change in the Entity's compliance obligations under the applicable Standards and Requirements.

37. The Facility Ratings were incorrect for a number of reasons. These include updated relay settings or new relays that were not communicated to TPAM, field work that differed from project planning or was completed ahead of schedule that was not communicated to TPAM and field work that TPAM was not aware of.
38. The root cause of this violation was ineffective interdepartmental coordination or silos between departments. More specifically, communication between TPAM and other departments (Protection Engineering, Transmission Engineering, Project Management, Asset Management, Operations & Maintenance and the Transmission Control Centers) was insufficient. Contributing causes include a failure to identify or understand roles and responsibilities, gaps in procedures, insufficient training, and lack of controls.

Risk Assessment

39. The violation posed a serious risk to the reliability of the bulk power system.⁶
40. A failure to have Facility Ratings that are consistent with the associated Facility Ratings methodology or documentation for determining Facility Ratings could lead to an incorrect Facility Rating if a missing, or incorrectly rated component turns out to be the MLE. In all cases of incorrect Facility Ratings, the System Operator is operating with a decreased level of situational awareness in real-time and is monitoring contingencies with reduced accuracy. Incorrect Facility Ratings also result in inaccurate system planning, including planning during short-term studies, long term studies, seasonal assessments, capital project studies, and other studies. Incorrectly inflated ratings increase the likelihood of equipment damage or failure which could adversely affect electric power transmission system performance. It also increases the risk that the System Operator is operating to incorrect System Operating Limits (SOL) or Interconnection Reliability Operating Limits (IROL). If the Facility Rating was too low, it could have resulted in unnecessary reductions in transfer, or generator output, and/or a perception of congestion that did not really exist. Whether the incorrect ratings

⁶ FAC-008-3 R6 has a VRF of "Medium" pursuant to the VRF Matrix. According to the VSL Matrix, this noncompliance warranted a "High" VSL.

were too high or too low, System Operators could have been required to implement reliability actions that otherwise would not have been needed.

41. In this case, the Entity's failure to have Facility Ratings consistent with its FRM resulted in incorrect Facility Ratings being used for planning and operations of the BPS by NGUSA, ISO-NE, and the NYISO. 100 of NGUSA's 726 Facilities had incorrect Facility Ratings. Of the 100, 34 had all six applicable ratings (Normal, LTE, STE for summer and winter) incorrectly calculated.
42. Of these 100 Facilities, 21 (19 operated at 115 kV, 1 operated at 230 kV and 1 operated at 345 kV) required ratings reductions; twelve of which consisted of reductions in Facility Ratings that were less than 4% each, while the remaining nine Facility Ratings had reductions ranging from 8.7% to 70.94%. For these 21 Facilities, there was an increased risk that the System Operator could have been unknowingly operating the system in a degraded state of security and that SOLs could have been exceeded resulting in damage to the Facilities.
43. During the past three years, there were five circuits where loadings in real-time operation exceeded the previous incorrect Facility Ratings. The largest overload exceeded the STE rating for both the previous incorrect Facility Rating and the current correct Facility Rating.
44. The remaining 79 Facilities required an increase in ratings. The largest rating increase was 347 MVA, which is 120.9% of the previous STE rating for a 115 kV feeder.
45. Of the 100 incorrect Facility Ratings, thirteen were associated with an IROL (6 in New England and 7 in New York). Eleven of the Facilities associated with an IROL were 115 kV transmission Facilities, one was 230 kV and one was 345 kV and only two had a Facility Rating decrease. The other eleven had Facility Rating increases.
46. Of the 100 incorrect Facility Ratings, 67 became identified as BES Facilities in accordance with the updated BES definition on July 1, 2016.
47. No harm is known to have occurred as a result of this violation.

Mitigation Actions

48. To mitigate this violation, the Entity:
 - a. Corrected the incorrect Facility Ratings. In New England, Facility Ratings were updated in NGUSA's Facility Ratings tool and uploaded to ISO-NE's NX-9 Application. In New York, Facility Ratings were updated in the Access database and communicated to NYISO.
 - b. Improved the identification of the roles and responsibilities of NGUSA departments, including that TPAM is responsible for maintaining and communicating the correct Facility Ratings.

- c. Amended its FRM to document how global changes to key assumptions will be implemented and/or applied to existing Facility Ratings.
 - d. Developed and instituted a semi-annual review in New York as an internal control to verify that Facility Ratings updates made within the previous six months were correctly implemented and documented.
 - e. Developed and instituted an annual review, which includes lessons learned for near misses and sharing of previous related noncompliance.
 - f. Updated its methodology and procedure for evaluating Facility Rating database changes in the NYISO.
 - g. Updated and documented a procedure for communicating Facility Rating changes with the NYISO.
 - h. Instituted annual FAC-008 training for several departments.
 - i. Developed end-to-end process mapping.
49. On May 12, 2022, NGUSA submitted to NPCC a Mitigation Plan to address the subject violation with FAC-008-3 R6 and R8. See Mitigation Plan NPCCMIT015699. On May 18, 2022, NPCC accepted the Mitigation Plan.
50. To mitigate this violation, NGUSA will conduct walk-downs of its BES substations and switching stations in New York, Massachusetts, New Hampshire and Vermont. 175 BES (107 in New York and 68 in Massachusetts, New Hampshire and Vermont) stations will be visited over a three year period. The walk-downs will be prioritized by geographic location, number of breakers, age, and recent work performed. If time allows, some of the work allocated to a subsequent year may be completed early. Walkdowns will consist of visual inspection and photography of asset/equipment nameplates, Bushing Current Transformer ratio tap settings, and bus conductor types at each station. Equipment and bus conductors that cannot be verified in the field will be verified using station records. In conjunction with the 3-year baseline, the Relay Loadability tracker formulas will be verified and updated for consistency; and the Relay Loadability tracker will be updated to include all load responsive relay settings for BES elements in order to apply relay limits into NGUSA's Facility Ratings tool (PG-65).

FAC-008-3 R8 (NPCC2020023141)

51. FAC-008-3 R8 states:

R8 Each Transmission Owner (and each Generator Owner subject to Requirement R2) shall provide requested information as specified below (for its solely and jointly owned Facilities that are existing Facilities, new Facilities, modifications to existing Facilities and re-ratings of existing Facilities) to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission

Owner(s) and Transmission Operator(s): [Violation Risk Factor: Medium] [Time Horizon: Operations Planning]

8.1 As scheduled by the requesting entities:

8.1.1. Facility Ratings

8.1.2. Identity of the most limiting equipment of the Facilities

8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that limits the use of Facilities under the requester's authority by causing any of the following: 1) An Interconnection Reliability Operating Limit, 2) A limitation of Total Transfer Capability, 3) An impediment to generator deliverability, or 4) An impediment to service to a major load center:

8.2.1. Identity of the existing next most limiting equipment of the Facility

8.2.2. The Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

Description of Violation

52. On April 2, 2020, NGUSA submitted a Self-Report stating that, as a TO, it was in noncompliance with FAC-008-3 R8. Specifically, during preparations for its annual TPL-001-4 planning assessment and another related project, NGUSA discovered on September 10, 2019 that it did not provide accurate Facility Ratings for six transmission Facilities to ISO-NE and NYISO. Following the discovery, NGUSA performed an extent of condition review.
 53. The extent of condition review consisted of comparing all 726 Facility Ratings in NGUSA's PG-65 in New England and the Access Database New York with the Facility Ratings databases used by ISO-NE and NYISO, respectively. Through the extent of condition review, NGUSA discovered discrepancies with 154 Facilities in which NGUSA did not provide either ISO-NE or NYISO with accurate Facility Ratings or the accurate identity of the most limiting equipment of the Facility.
 54. NPCC determined that the duration of the noncompliance spans multiple versions of the Reliability Standard, as follows:
 - FAC-009-1 R2, from June 18, 2007 until December 31, 2012 (the standard's retirement date); and
 - FAC-008-3 R8, from January 1, 2013 until September 30, 2016 (the standard's retirement date) and
 - FAC-008-4 R8, from October 1, 2016 to date. The noncompliance is ongoing and will be mitigated when NGUSA can confirm it provided NYISO and ISO-NE with accurate Facility Ratings and the identity of the most limiting equipment of the Facilities.
- NPCC further determined that, for purposes of this noncompliance, there was no substantive change in the Entity's compliance obligations under the applicable Standards and Requirements.

55. The Facility Ratings and identity of the most limiting equipment of the Facilities were incorrect for a number of reasons. These include updated relay settings or new relays that were not communicated to TPAM and field work that differed from project planning or was completed ahead of schedule that was not communicated to TPAM and field work that TPAM was not aware of.
56. The root cause of this violation was ineffective interdepartmental coordination or silos between departments. More specifically, communication between TPAM and other departments (Protection Engineering, Transmission Engineering, Project Management, Asset Management, Operations & Maintenance and the Transmission Control Centers) was insufficient. Contributing causes include gaps in procedures, insufficient training, and lack of controls.

Risk Assessment

57. The violation posed a serious risk to the reliability of the bulk power system.⁷
58. A failure to provide accurate Facility Ratings and the accurate identity of the most limiting equipment of Facilities to ISO-NE and NYISO resulted in both ISO-NE and NYISO planning and operating the BPS with incorrect information. A failure to plan and operate the BPS with correct Facility Ratings is described above in paragraphs 40 through 44 and is also applicable to the risk assessment for R8.
59. With respect to operations, the identification of the incorrect MLE can have a negative impact on reliable operation of the BPS, particularly for Facilities with multiple MLEs. For example, an underground high voltage cable may be the (first) MLE for the Normal (continuous) rating, but a disconnect switch may be the (second) MLE for the four-hour emergency rating (LTE). Under emergency stressed system conditions, contingency conditions may reveal a thermal overload above the Normal rating of the first MLE. However, that first MLE also likely has a documented LTE rating that could sustain the overload for four hours. If the second MLE does not afford much increase in the Normal rating above the first MLE, and its overload can result in the removal of the Facility from service (e.g. through a protection relay operation), the prior identification of the specific limiting rating for this second MLE could alter the mitigation plans and avoid relay operations that trip the Facility out-of-service. The Facility can now be operated for four hours with loadings above Normal but below LTE and thus potentially prevent a cascading event in the middle of an emergency.

⁷ FAC-008-3 R8 has a VRF of “Medium” pursuant to the VRF Matrix. According to the VSL Matrix, this noncompliance warranted a “Severe” VSL.

60. The violation impacted 154 Facilities or approximately 21% of the Entity's Facilities in the scope of the Standard as summarized in the table below.

Noncompliant Facilities	Total
Number of Facilities with incorrect Facility Ratings only	28
Number of Facilities with incorrect MLE and Facility Ratings	72
Number of Facilities with incorrect MLE identifier only and no ratings change	52
Number of Facilities reported late to ISO	2
Total noncompliant Facilities	154
Number of Facilities with more specificity within the same MLE identifier	15
Applicable Baseline Facilities	726

61. As noted above, 28 Facilities had the correct MLE identified, but had incorrect Facility Ratings. Seventy-two (72) Facilities had both the incorrect MLE identified and the incorrect Facility Rating. These 100 Facilities also resulted in a violation of R6, described above.

62. Additionally, 52 Facilities had the incorrect MLE identified in the database but had the correct Facility Ratings. Finally, 15 Facilities had the correct MLE identified and the correct Facility Ratings but required more specificity to make the MLE identifier clear.

63. Of the 154 Facilities with discrepancies, 109 were identified as BES Facilities in accordance with the updated definition of the Bulk Electric System on July 1, 2016.

64. No harm is known to have occurred as a result of this violation.

Mitigation Actions

65. To mitigate this violation, the Entity:

- Corrected the incorrect Facility Ratings. In New England, Facility Ratings were updated in NGUSA's Facility Ratings tool and uploaded to ISO-NE's NX-9 Application. In New York, Facility Ratings were updated in the Access Database and communicated to NYISO.
- Improved the identification of the roles and responsibilities of NGUSA departments, including that TPAM is responsible for maintaining and communicating the correct Facility Ratings.
- Amended its FRM to document how global changes to key assumptions will be implemented and/or applied to existing Facility Ratings.
- Developed and instituted a semi-annual review in New York as an internal control to verify that Facility Ratings updates made within the previous six months were correctly implemented and documented.
- Developed and instituted an annual review, which includes lessons learned for near misses and sharing of previous related noncompliance.
- Updated its methodology and procedure for evaluating Facility Rating database changes in the NYISO.

- g. Updated and documented a procedure for communicating Facility Rating changes with the NYISO.
 - h. Instituted annual FAC-008 training for several departments.
 - i. Developed end-to-end process mapping specific to Facility Ratings.
66. On May 12, 2022, NGUSA submitted to NPCC a Mitigation Plan to address the subject violation with FAC-008-3 R6 and R8. See Mitigation Plan NPCCMIT015698. On May 18, 2022, NPCC accepted the Mitigation Plan.
67. To mitigate this violation, NGUSA will conduct walk-downs of its BES substations and switching stations in New York, Massachusetts, New Hampshire and Vermont. 175 BES (107 in New York and 68 in Massachusetts, New Hampshire and Vermont) stations will be visited over a three year period. The walk-downs will be prioritized by geographic location, number of breakers, age, and recent work performed. If time allows, some of the work allocated to a subsequent year may be completed early. Walkdowns will consist of visual inspection and photography of asset/equipment nameplates, Bushing Current Transformer ratio tap settings, and bus conductor types at each station. Equipment and bus conductors that cannot be verified in the field will be verified using station records. In conjunction with the 3-year baseline, the Relay Loadability tracker formulas will be verified and updated for consistency; and the Relay Loadability tracker will be updated to include all load responsive relay settings for BES elements in order to apply relay limits into NGUSA's Facility Ratings tool (PG-65).

PRC-023-4 R1 (NPCC2019021964)

68. The purpose of PRC-023-4 is that protective relay settings shall not limit transmission loadability; not interfere with system operators' ability to take remedial action to protect system reliability; and be set to reliably detect all fault conditions and protect the electrical network from these faults.
69. PRC-023-4, R1 and Criteria 1 and 2 state:
- R1.** Each Transmission Owner, Generator Owner, and Distribution Provider shall use any one of the following criteria (Requirement R1, criteria 1 through 13) for any specific circuit terminal to prevent its phase protective relay settings from limiting transmission system loadability while maintaining reliable protection of the BES for all fault conditions. Each Transmission Owner, Generator Owner, and Distribution Provider shall evaluate relay loadability at 0.85 per unit voltage and a power factor angle of 30 degrees. [Violation Risk Factor: High] [Time Horizon: Long Term Planning].
- Criteria:**
- 1. Set transmission line relays so they do not operate at or below 150% of the highest seasonal Facility Rating of a circuit, for the available defined loading duration nearest 4 hours (expressed in amperes).
 - 2. Set transmission line relays so they do not operate at or below 115% of the highest seasonal 15-minute Facility Rating of a circuit (expressed in amperes).

70. PRC-023-4 – Attachment A states: **1.** This standard includes any protective functions which could trip with or without time delay, on load current, including but not limited to: **1.6.** Phase overcurrent supervisory elements (i.e., phase fault detectors) associated with current-based, communication-assisted schemes (i.e., pilot wire, phase comparison, and line current differential) where the scheme is capable of tripping for loss of communications.

Description of Violation

71. NGUSA notified NPCC through a Self-Log on July 31, 2019 that it was noncompliant with PRC-023-4 R1. NGUSA initially reported ten protective relay settings that did not meet Criterion 1 for relay loadability. On May 28, 2020, NGUSA subsequently notified NPCC that one additional relay setting did not meet Criterion 2 for a pilot wire protection scheme in scope of PRC-023-4 Attachment A, section 1.6. On September 27, 2021, NGUSA identified five additional protective relay settings that did not meet Criterion 1 for relay loadability. In total, NGUSA identified and reported sixteen noncompliant relay settings affecting thirteen transmission lines.
72. The first instance of the violation began on July 1, 2010 when NGUSA was initially required to meet Criterion 1 of PRC-023-4, R1 for six lines that operated at or above 200 kV. Two other lines were added on July 1, 2018, as additional relays protecting 115 kV lines, because they were selected by the Entity's Planning Coordinator. Criterion 1 specifies that line relays shall not operate at or below 150% of the highest seasonal Facility Rating of a circuit, for the available defined loading duration nearest 4 hours (expressed in amperes). For the eight transmission lines, ten relays were set to operate below 150% of Winter Long Term Emergency (LTE) Rating of a circuit. The incorrect relay settings ranged from 52.30% to 131.12% Winter LTE. On October 23, 2019, NGUSA completed ten relay setting adjustments, bringing the eight lines into compliance with Criterion 1. The first instance of the violation was discovered by NGUSA during a PRC-023 compliance review.
73. NGUSA was also required to meet Criterion 2 for an overcurrent protective relaying that included a communication-assisted scheme capable of tripping a 345 kV feeder for loss of its pilot wire. Criterion 2 specifies that line relays shall not operate at or below 115% of the highest seasonal 15-minute Facility Rating of a circuit. This second instance of the violation began on July 1, 2012, when PRC-023-2 became enforceable. This revision of the standard included the addition of section 1.6 of Attachment A, which specified that such overcurrent relays (enabled upon loss of communications in a line differential scheme) are required to comply. The relay setting had not changed since it was originally set in 1988, but the overcurrent protective relay was set to operate below 115% of the Winter Short Term Emergency (STE) Rating of a circuit if such line currents were concurrent with a loss of the differential scheme communications. Discovery of the noncompliance prompted NGUSA to increase the relay trip point, upon conclusion of a fault study, and create a new calculation for the relay set point. On July 7, 2020, the 345 kV feeder protection relay received new settings compliant

with Criterion 2, which enables the line to operate at the STE, below the trip point, thus ending the violation. NGUSA plans to replace the communications relay scheme before year end 2022 with a microprocessor-based differential relay that does not require overcurrent elements to become active upon a communications failure. This second instance of the violation was discovered by an internal review on the 345 kV end of line connection, which was prompted by an inquiry to NGUSA from the plant owner.

74. The third instance of the violation was discovered during an extent of condition review. Five relays for three other transmission lines operating at or above 115 kV were noncompliant with Criterion 1, as they were set to operate below 150% of Winter Long Term Emergency (LTE) Rating of a circuit. This third instance of the violation began on July 1, 2018. For these transmission lines, an enabled switch-on-to-fault scheme design was not considered for line relay loadability such that undervoltage supervision was not enabled or undervoltage supervision was enabled but not set correctly. These incorrect relay settings ranged from 12.88% to 123.35% Winter LTE. NGUSA corrected the five relay settings of the three remaining lines to operate above 150% of Winter LTE on September 28, 2021, ending the noncompliance as all 16 relay settings of the 13 affected transmission lines were brought in line with PRC-023.
75. NPCC determined that the duration of the violation spans multiple versions of the Reliability Standard, as follows:
 - PRC-023-1 R1, from July 1, 2010 until June 30, 2012 (the standard's retirement date);
 - PRC-023-2 R1, from July 1, 2012 until September 30, 2014 (the standard's retirement date);
 - PRC-023-3 R1, from October 1, 2014 until May 31, 2017 (the standard's retirement date); and
 - PRC-023-4, R1, from April 1, 2017 until September 28, 2021, when NGUSA corrected all known incorrect relay settings.
 NPCC further determined that, for purposes of this noncompliance, there was no substantive change in NGUSA's compliance obligations under the applicable Standards and Requirements.
76. The root cause of this violation was ineffective interdepartmental coordination or silos between departments. More specifically, communication between Protection Engineering and TPAM was insufficient. Contributing causes include gaps in procedures, insufficient training, and a failure to recognize the loadability impact of limiting transformers installed in series with applicable feeders on protection relays' settings.

Risk Assessment

77. The violation posed a moderate risk and did not pose a serious or substantial risk to the reliability of the bulk power system.⁸
78. Setting protective relays at or below 150% of the highest 4-hour seasonal Facility Rating or at or below 115% of the highest seasonal 15-minute Facility Rating increases the risk that transmission lines would trip prematurely, thus limiting the ability of transmission operators to take remedial action while protecting transmission equipment. This violation spanned several years.
79. The violation affected 13 transmission lines, of which seven are 345 kV feeders. Additionally, eight of the affected feeders are part of an Interconnection Reliability Operating Limit (IROL), which can significantly impact the interconnected system and may lead to cascading outages if they are unnecessarily exceeded by inadequate protection schemes. Collectively, the noncompliant relays reduced the Winter LTE rating of the affected feeders by over 7,500 MVA. As a compensating factor, the Entity is a summer peaking system and the loadability of the feeders affected the Winter season.
80. No harm is known to have occurred.
81. NPCC considered the Entity's compliance history and determined there were no relevant prior instances of noncompliance.

Mitigation Actions

82. To mitigate the noncompliance, the Entity has or will perform the following actions:
 - a. Calculated and applied new settings for the relays in scope.
 - b. Developed and implemented a tracking spreadsheet to ensure that applicable relays are set in compliance with PRC-023, with settings calculated and based on current data.
 - c. Created a new procedure that describes the annual process of compliance for new lines which includes flow charts that map out communication between departments; and describes the process for updating the Relay Loadability Tracker spreadsheet with new lines and/or any changes.
 - d. Implemented an annual training addition/module for the Protection Engineering team on how to complete the Relay Loadability Tracker spreadsheet.
 - e. Added an internal control for Relay Loadability Tracker spreadsheet updates.
 - f. Will standardize the LPRO relay calculation sheets and provide training so there is department awareness of the uniqueness of the generations of the relays.
 - g. Will update the annual training (referenced in Item d) to include the different calculations that exist and when to apply them – (Next training - January 2023).

⁸ PRC-023-4 R1 has a VRF of "High" pursuant to the VRF Matrix. According to the VSL Matrix, this noncompliance warranted a "Severe" VSL.

- h. In conjunction with the 3-year baseline, the Relay Loadability tracker formulas will be verified and updated for consistency; and the Relay Loadability tracker will be updated to include all load responsive relay settings for PRC-023 elements in order to apply relay limits into NGUSA's Facility Ratings tool (PG-65).
- 83. On May 12, 2022, NGUSA submitted to NPCC a Mitigation Plan to address the subject violation with FAC-008-3 R6 and R8. See Mitigation Plan NPCCMIT015700. On May 18, 2022, NPCC accepted the Mitigation Plan.

Attachment 2
Self-Report for FAC-008-3 R6
dated July 20, 2020

This item was submitted by Lisa Codere-Lopez (lisa.codere-lopez@nationalgrid.com) on 7/20/2020

Please note that the circumstances under which an Entity would submit a Scope Expansion form are different from what would require a new Self-Report. Please review the material in [this link](#) to see clarifying information and examples of these differences before continuing with this form.

FORM INFORMATION

Registered Entity: National Grid USA

NERC Registry ID: NCR11171

JRO ID:

CFR ID:

Entity Contact Information: Lisa Codere-Lopez

REPORTING INFORMATION

Applicable Standard: FAC-008-3

Applicable Requirement: R6.

Applicable Sub Requirement(s):

Applicable Functions: TO

Has a Possible violation of this standard and requirement previously been reported or discovered: No

Has this Possible Violation previously been reported to other Regions: No

Date Possible Violation was discovered: 9/10/2019

Beginning Date of Possible Violation: 5/20/2019

End or Expected End Date of Possible Violation: 9/16/2019

Is the violation still occurring? No

Provide detailed description and cause of Possible Violation:

National Grid did not have facility ratings for these 5 Transmission Facilities that were consistent with the Company's Facility Ratings methodology.

#1-#4 - The issue was discovered during preparations for the annual TPL-001-4 Planning Assessment.

#5 - The issue was identified during the review of a related project.

1. Gap in processes resulted in Transmission Asset Management & Planning, New England (TAMP-NE) not being aware of relay setting changes.
2. Deficiency in the communication between TAMP-NE and Transmission Engineering.

Please see above.

The 5 circuits are described below:

1. 345 kV Transmission line 332 between West Farnum and Kent County.
2. 115 kV Transmission line segment F-184-1 between Brayton Point and Merriman Junction (part of Transmission line F-184 between Brayton Point and Read Street).
3. 115 kV Transmission line I-135S between Pratts Junction (owned by NG) and Flagg Pond (owned by Fitchburg Gas and Electric; FG&E).
4. 115 kV Transmission line segment J-136S-3 between Pratts Junction and Litchfield Junction (part of Transmission line J-136S between Pratts Junction and Flagg Pond (FG&E)).
5. 115 kV Transmission line V-148N between Woonsocket and Washington.

Please see above.

Are Mitigating Activities in progress or completed? Yes

An informal Mitigation Plan will be created upon submittal of this Self-Report with mitigating activities. If you would like to formalize that Mitigation Plan, please contact the Region.

If Yes, Provide description of Mitigating Activities:

As soon as these issues were identified, Facility Ratings were established/calculated based on National Grid's Facility Ratings Methodology and were submitted to the associated RCs and PCs (ISO-NE and NYISO).

Currently, NGUSA is conducting an extent of condition for the self-reported R8 non-compliance for itself (as a TO), as follows.

- a. Comparing Facility Ratings for all BES elements in New England owned by National Grid USA between the PG65 (NGUSA's Facility Ratings tool) and the ISO-NE

NX-9 (Facility Ratings database)
b. Comparing Facility Ratings for all BES elements in New York owned by National Grid USA between the Access Database and the NYISO Seasonal Ratings Spreadsheet.

Based on the findings of this work effort, a determination will be made as to the need for any additional follow up mitigation actions.

Please see above.

Provide details to prevent recurrence:

The following mitigation activities have been completed and uploaded to the NPCC portal.
1. Developed SharePoint Alert to send automatic notifications to TAMP-NE when relay settings have been developed/created.
2. Updated procedures PR.06.01.004, "4.4A Detailed Design" and PR.06.01.005, "4.3 Develop and Sanction" to specify the teams to be invited to the Value Engineering Meeting, including Transmission Planning. The cross-functional meeting is hosted by Transmission Engineering to discuss and approve any design changes / updates. The Transmission Engineering Manager sent out an email to the team to notify them of the updated procedures.
3. Conducted a combined cross-functional review meeting (for NY) to include how and when Scheduled Outage dates and earliest/latest Ready for Load dates are input and updated in Primavera (P6, Project Management's project scheduling & tracking database); and how this is communicated to the affected stakeholders.

Please see above.

Date Mitigating Activities (including activities to prevent recurrence) are expected to be completed or were completed:

8/31/2020

MITIGATING ACTIVITIES

Title	Due Date	Description	Prevents Recurrence
No data available in table			

Potential Impact to the Bulk Power System: Minimal

Actual Impact to the Bulk Power System: Minimal

Provide detailed description of Potential Risk to Bulk Power System:

Please see description above:

Transmission lines I-135S (#3) and J-136S (#4) are part of a designated IROL interface.

National Grid US connects more than 7 million customers to vital energy sources through its electricity and natural gas delivery networks in Massachusetts, New York and Rhode Island.

National Grid US is the largest distributor of natural gas in the Northeast, serving approximately 3.7 million customers in Massachusetts, New York and Rhode Island. National Grid USA (NGUSA) is a wholly-owned direct subsidiary of National Grid US, which is a wholly-owned indirect subsidiary of National Grid plc, a United Kingdom company.

NGUSA is registered as a Distribution Provider (DP), Transmission Owner (TO), Transmission Planner (TP), and Transmission Service Provider (TSP).

NGUSA's NE and NY Transmission Line Miles:

- 69 kV: 522 miles
- 115 kV: 6,129 miles
- 230 kV: 888 miles
- 345 kV: 1,168 miles
- 450 kV: 287.5 miles (HVDC)

NGUSA owns and operates approximately 122,000 miles of electric distribution lines, serving approximately 3.5 million customers in upstate New York, Massachusetts and Rhode Island. NGUSA's peak load for New England is 6,400 MW and 7,017 MW for New York. NGUSA has transmission circuits that are associated with documented IROLs as assigned by the RC/TOP.

There was minimal risk to the reliability and/or operability of the BPS. For Transmission Facilities #1-#4, the failure to submit the new facility rating in a timely manner did not increase risk to customers, the BES, or the BPS. The late submission of the new facility rating resulted in an increase to the rating of the line, along with its continued reliable operation within the conservative limits of the previous rating.

The corrected ratings for the V-148N line resulted in a de-rating of the normal rating, while the long-term emergency (LTE) rating remained the same and the short-term emergency (STE) ratings increased slightly. While the normal rating defines maximum allowable loading at which the equipment can operate continuously, the LTE and STE ratings of equipment may allow an elevation in operating temperatures over a specific period provided the emergency loading is reduced back to, or below, a specific loading in a specific period of time. During Transmission System planning studies, the allowable facility loading for design contingencies are set by the LTE limit, i.e., the LTE rating is used as the emergency thermal limit.

In the Reliability Need Determination Form for 'Evaluation of Need for Brayton Point Station for Non-Price Retirement' for the 2017-2018 Capacity Commitment Period (ISO-NE, Dec. 2013) results of the N-1 thermal analysis with Brayton Point Station retired and Tiverton out-of-service showed a thermal violation for the V-148N line. Since the LTE rating remained the same before and after the correction of V-148N Facility Ratings due to the discovered error of not including the second conductor type composing the V-148 N Transmission line, it seems reasonable to assume the discrepancy in Facility Ratings only resulted in minimal risk to the reliability and/or operability of the BPS.

TAMP-NE performs annual TPL-001-4 Planning Assessments which include forecasted loads. Since the first four lines were uprated, the TPL studies included more conservative assumptions, and hence these uprating posed no risk to the reliability and/or operability of the BPS. The corrected Facility Ratings for the fifth line resulted in a de-rating of the normal rating, while the long-term emergency (LTE) rating remained the same and the short-term emergency (STE) ratings increased slightly. A comparison of the results from a study of the area (Reliability Need Determination Form for 'Evaluation of Need for Brayton Point Station for Non-Price Retirement' for the 2017-2018 Capacity Commitment Period, ISO-NE, Dec. 2013) was performed. It seems reasonable to assume the discrepancy in Facility Ratings only resulted in minimal risk to the reliability and/or operability of the BPS.

Minimal

Provide detailed description of Actual Risk to Bulk Power System:

TAMP have preventative controls in place (procedures, meetings, processes) that serve to help reduce the risk(s) of a Facility Ratings discrepancy or late submission to their respective ISO.

The discovery of these five (5) potential non-compliances has highlighted the existence of deficiencies in our cross-functional communications and processes.

Changes are being implemented by the functional departments (or organizations) and their responsible Subject Matter Experts (SMEs), in conjunction with Reliability Compliance. There were no issues on the BPS as a result of these non-compliances.

These non-compliances do not affect the local system design, nor do they impact the system's ability to sustain potential outages without the need to shed load. As the ratings for 4 of the Transmission Facilities increased, the late submittal of the new facility ratings resulted in a conservative operation of the lines within the limits of the previous rating.

The corrected ratings for the V-148N line resulted in a de-rating of the normal rating, while the LTE rating remained the same and the STE ratings increased slightly. Since the LTE rating remained the same before and after the correction of V-148N Facility Ratings due to the discovered error of not including the second conductor type composing the V-148 N Transmission line, it seems reasonable to assume the discrepancy in Facility Ratings only resulted in minimal risk to the reliability and/or

operability of the BPS.

Please see above.

Additional Comments:

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

Attachment 3
Mitigation Plan designated as NPCCMIT015699
for FAC-008-3 R6 submitted May 12, 2022



The new Align system is now operational, please login in [here](#)



NPCC Member Portal



Welcome Jason Wang



National Grid USA



Logout

HOME

SYSTEM ADMINISTRATION

TFES

SELF-CERTIFICATIONS

SELF-REPORTS

SCOPE EXPANSIONS

COMPLAINTS

MITIGATION PLANS

> Add New Mitigation Plan

> Search Mitigation Plans

> Search Mitigation Plan Closures

NON-COMPLIANCE

PERIODIC DATA SUBMITTALS

QUESTIONNAIRE

CREATE REVISION

CREATE PDF

ATTACHMENTS (0)

GO TO CLOSURE FORM

GO TO EXTENSION FORM

This item was signed by Elizabeth Spivak (elizabeth.spivak@nationalgrid.com) on 5/12/2022

This item was marked ready for signature by Lisa Codere-Lopez (lisa.codere-lopez@nationalgrid.com) on 5/4/2022

MITIGATION PLAN REVISIONS

	Requirement	NERC Violation IDs	Regional Violation Ids	Date Submitted	Status	Type	Revision Number
Select	FAC-008-3 R6.	NPCC2020023725	NPCC2020-203121	07/20/2020	Replaced with Revision	Informal	
	FAC-008-3 R6.	NPCC2020023725	NPCC2020-203121	05/12/2022	Region Accepted MP - Entity Implementing	Formal	1

SECTION A: COMPLIANCE NOTICES & MITIGATION PLAN REQUIREMENTS

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

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

SECTION B: REGISTERED ENTITY INFORMATION

B.1 Identify your organization

Company Name: National Grid USA

Company Address: 40 Sylvan Road

Waltham, Massachusetts 02451

Compliance Registry ID: NCR11171

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

Name: Lisa Codere-Lopez

- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
- > Add New Mitigation Plan
- > Search Mitigation Plans
- > Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

- CREATE REVISION
- CREATE PDF
- ATTACHMENTS (0)
- GO TO CLOSURE FORM
- GO TO EXTENSION FORM

Name:

Lisa Codere-Lopez

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 Reliability Standard listed below.

Standard:

FAC-008-3

Requirement	Regional ID	NERC Violation ID	Date Issue Reported
R6.	NPCC2020-203121	NPCC2020023725	7/20/2020

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

Ineffective interdepartmental coordination or silos between departments. Contributing causes include gaps in procedures, insufficient training, and lack of controls.

[Attachments \(\)](#)

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

The Facility Ratings and identity of the most limiting equipment of the Facilities were incorrect for a number of reasons. These include updated relay settings or new relays that were not communicated to Transmission Planning and field work that differed from project planning or was completed ahead of schedule that was not communicated to Transmission Planning and field work that Transmission Planning was not aware of.

[Attachments \(\)](#)

SECTION D: DETAILS OF PROPOSED MITIGATION PLAN

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

NGUSA will conduct walk-downs of its BES substations and switching stations in New York, Massachusetts, New Hampshire and Vermont. 175 BES (107 in New York and 68 in Massachusetts, New Hampshire and Vermont) stations will be visited over a three-year period. The walk-downs will be prioritized by geographic location, number of breakers, age, and recent work performed. If time allows, some of the work allocated to a subsequent year may be completed early. Walkdowns will consist of visual inspection and photography of asset/equipment nameplates, Bushing Current Transformer ratio tap settings, and bus conductor types to verify the data in our Facility Ratings tools. Any discrepancies will be noted and updated in the Facility Ratings tools. Equipment and bus conductors that cannot be verified in the field will be verified using station records.

In conjunction with the 3-year baseline, the Relay Loadability tracker/PRC-023 Database will be updated to include all load responsive relay settings for BES Elements in order to apply applicable relay limits into NGUSA's Facility Ratings tool (PG-65).

[Attachments \(\)](#)

HOME	
SYSTEM ADMINISTRATION	▼
TFES	▼
SELF-CERTIFICATIONS	▼
SELF-REPORTS	▼
SCOPE EXPANSIONS	▼
COMPLAINTS	▼
MITIGATION PLANS	▼
> Add New Mitigation Plan	
> Search Mitigation Plans	
> Search Mitigation Plan Closures	
NON-COMPLIANCE	▼
PERIODIC DATA SUBMITTALS	▼
QUESTIONNAIRE	▼

- CREATE REVISION
- CREATE PDF
- ATTACHMENTS (0)
- GO TO CLOSURE FORM
- GO TO EXTENSION FORM

SECTION D: DETAILS OF PROPOSED MITIGATION PLAN

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

NGUSA will conduct walk-downs of its BES substations and switching stations in New York, Massachusetts, New Hampshire and Vermont. 175 BES (107 in New York and 68 in Massachusetts, New Hampshire and Vermont) stations will be visited over a three-year period. The walk-downs will be prioritized by geographic location, number of breakers, age, and recent work performed. If time allows, some of the work allocated to a subsequent year may be completed early. Walkdowns will consist of visual inspection and photography of asset/equipment nameplates, Bushing Current Transformer ratio tap settings, and bus conductor types to verify the data in our Facility Ratings tools. Any discrepancies will be noted and updated in the Facility Ratings tools. Equipment and bus conductors that cannot be verified in the field will be verified using station records.

In conjunction with the 3-year baseline, the Relay Loadability tracker/PRC-023 Database will be updated to include all load responsive relay settings for BES Elements in order to apply applicable relay limits into NGUSA's Facility Ratings tool (PG-65).

Attachments (.)

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:

4/30/2025

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

Status Update #1

Milestone Pending (Due: 8/2/2022)

Provide status update on Asset Baseline and Relay Loadability Tracker / PRC-023 Database.

Status Update #2

Milestone Pending (Due: 10/31/2022)

Provide status update on Asset Baseline and Relay Loadability Tracker / PRC-023 Database.

Status Update #3

Milestone Pending (Due: 1/29/2023)

Provide status update on Asset Baseline and Relay Loadability Tracker / PRC-023 Database.

Station Asset Baseline - Year 1

Milestone Pending (Due: 4/29/2023)

NY to conduct 35 station asset baseline surveys and NE to conduct 8 station asset baseline surveys. All discrepancies will be updated in the Facility Ratings tools.

Relay Loadability Tracker / PRC-023 Database

Milestone Pending (Due: 7/28/2023)

The Relay Loadability Tracker/PRC-023 Database will be updated to include all load responsive relay settings for BES Elements. This will be provided to Transmission Planning.



- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
 - > Add New Mitigation Plan
 - > Search Mitigation Plans
 - > Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

CREATE REVISION

CREATE PDF

ATTACHMENTS (0)

GO TO CLOSURE FORM

GO TO EXTENSION FORM

Relay Loadability Tracker / PRC-023 Database

Milestone Pending (Due: 7/28/2023)

The Relay Loadability Tracker/PRC-023 Database will be updated to include all load responsive relay settings for BES Elements. This will be provided to Transmission Planning.

Status Update #4

Milestone Pending (Due: 10/26/2023)

Provide status update on Asset Baseline and improvements to Facility Ratings Tool.

Status Update #5

Milestone Pending (Due: 1/24/2024)

Provide status update on Asset Baseline and improvements to Facility Ratings Tool.

Station Asset Baseline - Year 2

Milestone Pending (Due: 4/23/2024)

NY will conduct another 35 station asset baseline surveys and NE will conduct an additional 31 station asset baseline surveys. All discrepancies will be updated in the Facility Ratings tools.

Status Update #6

Milestone Pending (Due: 7/22/2024)

Provide status update on Asset Baseline and improvements to Facility Ratings Tool.

Relay Limits

Milestone Pending (Due: 10/20/2024)

All applicable relay limits in the Relay Loadability Tracker provided by Protection Engineering - NE will be entered by Transmission Planning - NE into PG65. Line relay loadability limits have already been provided to Transmission Planning - NY and added to the Thermal Ratings Database.

Status Update #7

Milestone Pending (Due: 1/18/2025)

Provide status update on Asset Baseline.

Station Asset Baseline - Year 3

Milestone Pending (Due: 4/18/2025)

HOME
SYSTEM ADMINISTRATION
TFES
SELF-CERTIFICATIONS
SELF-REPORTS
SCOPE EXPANSIONS
COMPLAINTS
MITIGATION PLANS
> Add New Mitigation Plan
> Search Mitigation Plans
> Search Mitigation Plan Closures
NON-COMPLIANCE
PERIODIC DATA SUBMITTALS
QUESTIONNAIRE

- CREATE REVISION
- CREATE PDF
- ATTACHMENTS (0)
- GO TO CLOSURE FORM
- GO TO EXTENSION FORM

[Station Asset Baseline - Year 3](#)

Milestone Pending (Due: 4/18/2025)

NY will conduct another 35 station asset baseline surveys and NE will conduct an additional 29 station asset baseline surveys. All discrepancies will be updated in the Facility Ratings tools.

Coordination between Transmission Planning - NE and Protection Engineering - NE for 'true-up' of data sets.

SECTION E: INTERIM AND FUTURE RELIABILITY RISK

E.1 Abatement of Interim BPS Reliability Risk: While your organization is implementing this Mitigation Plan the reliability of the Bulk Power Supply (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):

NGUSA has already completed several mitigation actions including mapping out the Facility Ratings process from beginning to end to identify gaps and opportunities to decrease the risk of future non-compliances. There is a risk that additional FAC-008 non-compliances will be found during the 3-year station baseline review but if found, they will be prioritized and corrected in a timely manner.

[Attachments \(\)](#)

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

Conducting a station baseline will ensure our Facility Ratings are accurate and the Facility Ratings Process map that was developed to identify gaps and opportunities will be addressed to maintain ongoing compliance and decrease the likelihood of future non-compliances.

[Attachments \(\)](#)

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 NPCC 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:
 - I am Elizabeth Spivak of National Grid USA
 - I am qualified to sign this Mitigation Plan on behalf of National Grid USA



The new Align system is now operational, please login in [here](#)



NPCC Member Portal



Welcome Jason Wang



National Grid USA



Logout

- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
 - > Add New Mitigation Plan
 - > Search Mitigation Plans
 - > Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

[CREATE REVISION](#)[CREATE PDF](#)[ATTACHMENTS \(0\)](#)[GO TO CLOSURE FORM](#)[GO TO EXTENSION FORM](#)

[Attachments \(\)](#)

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

Conducting a station baseline will ensure our Facility Ratings are accurate and the Facility Ratings Process map that was developed to identify gaps and opportunities will be addressed to maintain ongoing compliance and decrease the likelihood of future non-compliances.

[Attachments \(\)](#)

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 NPCC 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:
 - I am Elizabeth Spivak of National Grid USA
 - I am qualified to sign this Mitigation Plan on behalf of National Grid USA
 - I understand National Grid USA's obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4 (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))
 - I have read and am familiar with the contents of this Mitigation Plan
 - National Grid USA agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by NPCC and approved by NERC

SECTION G: REGIONAL ENTITY CONTACT

Please direct any questions regarding completion of this form to:

Jason Wang

NPCC

NPCC

212-205-7068

jwang@npcc.org

Attachment 4
Self-Report for FAC-008-3 R8
dated April 2, 2020

This item was submitted by Lisa Codere-Lopez (lisa.codere-lopez@nationalgrid.com) on 4/2/2020

Please note that the circumstances under which an Entity would submit a Scope Expansion form are different from what would require a new Self-Report. Please review the material in [this link](#) to see clarifying information and examples of these differences before continuing with this form.

FORM INFORMATION

Registered Entity: National Grid USA

NERC Registry ID: NCR11171

JRO ID:

CFR ID:

Entity Contact Information: Lisa Codere-Lopez

REPORTING INFORMATION

Applicable Standard: FAC-008-3

Applicable Requirement: R8.

Applicable Sub Requirement(s):

Applicable Functions: TO

Has a Possible violation of this standard and requirement previously been reported or discovered: Yes

If yes, provide NERC Violation ID (if known):

NPCC2017-016878 and NPCC2017-018714

Date Reported to Region or Discovered by Region:

1/30/2017

Monitoring Method for previously reported or discovered:

Exception Report

Has this Possible Violation previously been reported to other Regions: No

Date Possible Violation was discovered: 9/10/2019

Beginning Date of Possible Violation: 5/20/2019

End or Expected End Date of Possible Violation: 9/16/2019

Is the violation still occurring? No

Provide detailed description and cause of Possible Violation:

The associated RCs and PCs (ISO-NE and NYISO), TPs, TOs, and TOPs did not have the most up-to-date facility ratings for these 6 Transmission Facilities.

#1-#4 - The issue was discovered during preparations for the annual TPL-001-4 Planning Assessment.

#5 - The issue was identified during the review of a related project.

#6 - The NY Transmission Control Center informed TAMP-NY that the re-conducted line was now in-service.

1. Gap in processes resulted in Transmission Asset Management & Planning, New England (TAMP-NE) not being aware of relay setting changes.

2. Deficiency in communication between TAMP-NE and Transmission Engineering.

3. Deficiency in communication between TAMP-NY and Project Management.

Please see above.

The 6 circuits are described below:

1. 345 kV Transmission line 332 between West Farnum and Kent County.

2. 115 kV Transmission line segment F-184-1 between Brayton Point and Merriman Junction

(part of Transmission line F-184 between Brayton Point and Read Street).

3. 115 kV Transmission line I-135S between Pratts Junction (owned by NG) and Flagg Pond (owned by Fitchburg Gas and Electric; FG&E).

4. 115 kV Transmission line segment J-136S-3 between Pratts Junction and Litchfield Junction (part of Transmission line J-136S between Pratts Junction and Flagg Pond (FG&E)).

5. 115 kV Transmission line V-148N between Woonsocket and Washington.

6. 115 kV Transmission line 36 between Huntley and Lockport.

Please see above.

Are Mitigating Activities in progress or completed? Yes

An informal Mitigation Plan will be created upon submittal of this Self-Report with mitigating activities. If you would like to formalize that Mitigation Plan, please contact the Region.

If Yes, Provide description of Mitigating Activities:

Updated Facility Ratings were submitted as soon as the issues were identified.

Provide details to prevent recurrence:

- 1. Develop SharePoint Alert to send automatic notifications to TAMP-NE when relay settings have been developed/created.
 - 2. Update procedures PR.06.01.004, "4.4A Detailed Design" and PR.06.01.005, "4.3 Develop and Sanction" to specify the teams to be invited to the Value Engineering Meeting, including Transmission Planning. The cross-functional meeting is hosted by Transmission Engineering to discuss and approve any design changes / updates. Once the procedures are updated, the Transmission Engineering Manager will send out an email to the team to notify them of the update.
 - 3. Conduct a combined cross-functional review meeting for the NY Line #36 non-compliance that includes how and when Scheduled Outage dates and earliest/latest Ready for Load dates are input and updated in Primavera (P6, Project Management's project scheduling & tracking database); and how this is communicated to the affected stakeholders.
- Cross-regional sharing of the incident analysis and reinforcement of Facility Ratings Standard and importance of compliance with its requirements.

Date Mitigating Activities (including activities to prevent recurrence) are expected to be completed or were completed:

6/30/2020

MITIGATING ACTIVITIES

Title	Due Date	Description	Prevents Recurrence
No data available in table			

Potential Impact to the Bulk Power System: Minimal

Actual Impact to the Bulk Power System: Minimal

Provide detailed description of Potential Risk to Bulk Power System:

Please see description above:

Transmission lines I-135S (#3) and J-136S (#4) are part of a designated IROL interface.

National Grid US connects more than 7 million customers to vital energy sources through its electricity and natural gas delivery networks in Massachusetts, New York and Rhode Island.

National Grid US is the largest distributor of natural gas in the Northeast, serving approximately 3.7 million customers in Massachusetts, New York and Rhode Island. National Grid USA (NGUSA) is a wholly-owned direct subsidiary of National Grid US, which is a wholly-owned indirect subsidiary of National Grid plc, a United Kingdom company.

NGUSA is registered as a Distribution Provider (DP), Transmission Owner (TO), Transmission Planner (TP), and Transmission Service Provider (TSP).

NGUSA's NE and NY Transmission Line Miles:

- 69 kV: 522 miles
- 115 kV: 6,129 miles
- 230 kV: 888 miles
- 345 kV: 1,168 miles
- 450 kV: 287.5 miles (HVDC)

NGUSA owns and operates approximately 122,000 miles of electric distribution lines, serving approximately 3.5 million customers in upstate New York, Massachusetts and Rhode Island. NGUSA's peak load for New England is 6,400 MW and 7,017 MW for New York. NGUSA has transmission circuits that are associated with documented IROLs as assigned by the RC/TOP.

There was minimal risk to the reliability and/or operability of the BPS. For Transmission Facilities #1-#4 and #6), the failure to submit the new facility rating in a timely manner did not increase risk to customers, the BES, or the BPS. Given that the rating of the line increased, the late submittal of the new facility rating resulted in a conservative operation of the line within the limits of the previous rating.

The corrected ratings for the V-148N line resulted in a de-rating of the normal rating, while the long-term emergency (LTE) rating remained the same and the short-term emergency (STE) ratings increased slightly. While the normal rating defines maximum allowable loading at which the equipment can operate continuously, the LTE and STE ratings of equipment may allow an elevation in operating temperatures over a specific period provided the emergency loading is reduced back to, or below, a specific loading in a specific period of time. During Transmission System planning studies, the allowable facility loading for design contingencies are set by the LTE limit, i.e., the LTE rating is used as the emergency thermal limit.

In the Reliability Need Determination Form for 'Evaluation of Need for Brayton Point Station for Non-Price Retirement' for the 2017-2018 Capacity Commitment Period (ISO-NE, Dec. 2013) results of the N-1 thermal analysis with Brayton Point Station retired and Tiverton out-of-service showed a thermal violation for the V-148N line. Since the LTE rating remained the same before and after the correction of V-148N Facility Ratings due to the discovered error of not including the second conductor type composing the V-148 N Transmission line, it seems reasonable to assume the discrepancy in Facility Ratings only resulted in minimal risk to the reliability and/or operability of the BPS.

TAMP-NE performs annual TPL-001-4 Planning Assessments which include forecasted loads. Since the first four lines were updated, the TPL studies included more conservative assumptions, and hence these updating posed no risk to the reliability and/or operability of the BPS. The corrected Facility Ratings for the fifth line resulted in a de-rating of the normal rating, while the long-term emergency (LTE) rating remained the same and the short-term emergency (STE) ratings increased slightly. A comparison of the results from a study of the area (Reliability Need Determination Form for 'Evaluation of Need for Brayton Point Station for Non-Price Retirement' for the 2017-2018 Capacity Commitment Period, ISO-NE, Dec. 2013) was performed. It seems reasonable to assume the discrepancy in Facility Ratings only resulted in minimal risk to the reliability and/or operability of the BPS. For the sixth Transmission Line, TAMP-NY had performed steady state power flow analyses to determine the conductor size required for the re-conductoring project.

Minimal

Provide detailed description of Actual Risk to Bulk Power System:

TAMP-NE and TAMP-NY have preventative controls in place (procedures, meetings, processes) that serve to help reduce the risk(s) of a Facility Ratings discrepancy or late submission to their respective ISO.

The discovery of these six (6) potential noncompliances has highlighted the existence of gaps in our cross-functional communications and processes.

Our incident analyses have resulted in the identification and design of corrective improvements, which are being done to:

- a) Remediate the causal factors and eliminate the gaps by revising our processes; and

b) Share lessons learned among all affected groups to reinforce awareness and understanding of the importance of Facility Ratings compliance.

These changes are being implemented by the functional departments (or organizations) and their responsible Subject Matter Experts (SMEs), in conjunction with Reliability Compliance.
There were no issues on the BPS as a result of these noncompliances.

These noncompliances do not affect the local system design, nor do they impact the system's ability to sustain potential outages without the need to shed load. As the ratings for 5 of the Transmission Facilities increased, the late submittal of the new facility ratings resulted in a conservative operation of the lines within the limits of the previous rating.

The corrected ratings for the V-148N line resulted in a de-rating of the normal rating, while the LTE rating remained the same and the STE ratings increased slightly. Since the LTE rating remained the same before and after the correction of V-148N Facility Ratings due to the discovered error of not including the second conductor type composing the V-148 N Transmission line, it seems reasonable to assume the discrepancy in Facility Ratings only resulted in minimal risk to the reliability and/or operability of the BPS.

Please see above.

Additional Comments:

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

Attachment 5

Entity's Mitigation Plan designated as NPCCMIT015698
for FAC-008-3 R8 submitted May 12, 2022



The new Align system is now operational, please login in [here](#)



NPCC Member Portal



Welcome Jason Wang



National Grid USA



Logout

- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
 - > Add New Mitigation Plan
 - > Search Mitigation Plans
 - > Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

[CREATE REVISION](#)[CREATE PDF](#)[ATTACHMENTS \(0\)](#)[GO TO CLOSURE FORM](#)[GO TO EXTENSION FORM](#)

This item was signed by Elizabeth Spivak (elizabeth.spivak@nationalgrid.com) on 5/12/2022



This item was marked ready for signature by Lisa Codere-Lopez (lisa.codere-lopez@nationalgrid.com) on 5/4/2022



MITIGATION PLAN REVISIONS

	Requirement	NERC Violation IDs	Regional Violation Ids	Date Submitted	Status	Type	Revision Number
Select	FAC-008-3 R8.	NPCC2020023141	NPCC2020-203047	04/02/2020	Replaced with Revision	Informal	
	FAC-008-3 R8.	NPCC2020023141	NPCC2020-203047	05/12/2022	Region Accepted MP - Entity Implementing	Formal	1

SECTION A: COMPLIANCE NOTICES & MITIGATION PLAN REQUIREMENTS

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

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

SECTION B: REGISTERED ENTITY INFORMATION

B.1 Identify your organization

Company Name:	National Grid USA
Company Address:	40 Sylvan Road
	Waltham, Massachusetts 02451
Compliance Registry ID:	NCR11171

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

Name:	Lisa Codere-Lopez
-------	-------------------



- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
 - > Add New Mitigation Plan
 - > Search Mitigation Plans
 - > Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

CREATE REVISION

CREATE PDF

ATTACHMENTS (0)

GO TO CLOSURE FORM

GO TO EXTENSION FORM

Name:

Lisa Codere-Lopez

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 Reliability Standard listed below.

Standard:

FAC-008-3

Requirement	Regional ID	NERC Violation ID	Date Issue Reported
R8.	NPCC2020-203047	NPCC2020023141	4/2/2020

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

Ineffective interdepartmental coordination or silos between departments. Contributing causes include gaps in procedures, insufficient training, and lack of controls.

[Attachments \(0\)](#)

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

The Facility Ratings and identity of the most limiting equipment of the Facilities were incorrect for a number of reasons. These include updated relay settings or new relays that were not communicated to Transmission Planning and field work that differed from project planning or was completed ahead of schedule that was not communicated to Transmission Planning and field work that Transmission Planning was not aware of.

[Attachments \(0\)](#)

SECTION D: DETAILS OF PROPOSED MITIGATION PLAN

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

NGUSA will conduct walk-downs of its BES substations and switching stations in New York, Massachusetts, New Hampshire and Vermont. 175 BES (107 in New York and 68 in Massachusetts, New Hampshire and Vermont) stations will be visited over a three-year period. The walk-downs will be prioritized by geographic location, number of breakers, age, and recent work performed. If time allows, some of the work allocated to a subsequent year may be completed early. Walkdowns will consist of visual inspection and photography of asset/equipment nameplates, Bushing Current Transformer ratio tap settings, and bus conductor types to verify the data in our Facility Ratings tools. Any discrepancies will be noted and updated in the Facility Ratings tools. Equipment and bus conductors that cannot be verified in the field will be verified using station records. In conjunction with the 3-year baseline, the Relay Loadability tracker/PRC-023 Database will be updated to include all load responsive relay settings for BES Elements in order to apply applicable relay limits into NGUSA's Facility Ratings tool (PG-65).

[Attachments \(0\)](#)



- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
 - > Add New Mitigation Plan
 - > Search Mitigation Plans
 - > Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

CREATE REVISION

CREATE PDF

ATTACHMENTS (0)

GO TO CLOSURE FORM

GO TO EXTENSION FORM

SECTION D: DETAILS OF PROPOSED MITIGATION PLAN

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

NGUSA will conduct walk-downs of its BES substations and switching stations in New York, Massachusetts, New Hampshire and Vermont. 175 BES (107 in New York and 68 in Massachusetts, New Hampshire and Vermont) stations will be visited over a three-year period. The walk-downs will be prioritized by geographic location, number of breakers, age, and recent work performed. If time allows, some of the work allocated to a subsequent year may be completed early. Walkdowns will consist of visual inspection and photography of asset/equipment nameplates, Bushing Current Transformer ratio tap settings, and bus conductor types to verify the data in our Facility Ratings tools. Any discrepancies will be noted and updated in the Facility Ratings tools. Equipment and bus conductors that cannot be verified in the field will be verified using station records. In conjunction with the 3-year baseline, the Relay Loadability tracker/PRC-023 Database will be updated to include all load responsive relay settings for BES Elements in order to apply applicable relay limits into NGUSA's Facility Ratings tool (PG-65).

[Attachments \(\)](#)

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:

4/30/2025

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

[Status Update #1](#)

Milestone Pending (Due: 8/2/2022)

Provide status update on Asset Baseline and Relay Loadability Tracker / PRC-023 Database.

[Status Update #2](#)

Milestone Pending (Due: 10/31/2022)

Provide status update on Asset Baseline and Relay Loadability Tracker / PRC-023 Database.

[Status Update #3](#)

Milestone Pending (Due: 1/29/2023)

Provide status update on Asset Baseline and Relay Loadability Tracker / PRC-023 Database.

[Station Asset Baseline - Year 1](#)

Milestone Pending (Due: 4/29/2023)

NY will conduct 35 station asset baseline surveys and NE will conduct 8 station asset baseline surveys. All discrepancies will be updated in the Facility Ratings tools.

[Relay Loadability Tracker / PRC-023 Database](#)

Milestone Pending (Due: 7/28/2023)

The Relay Loadability Tracker will be verified for accuracy, automated where possible and updated to ensure that the formulas are consistently applied by Protection Engineering. In addition, the Relay Loadability Tracker/PRC-023 Database will be updated to include all load responsive relay settings for BES Elements. This will be provided to Transmission Planning.



The new Align system is now operational, please login in [here](#)



NPCC Member Portal



Welcome Jason Wang



National Grid USA



Logout

- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
 - > Add New Mitigation Plan
 - > Search Mitigation Plans
 - > Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

[CREATE REVISION](#)[CREATE PDF](#)[ATTACHMENTS \(0\)](#)[GO TO CLOSURE FORM](#)[GO TO EXTENSION FORM](#)

[Relay Loadability Tracker / PRC-023 Database](#)

Milestone Pending (Due: 7/28/2023)

The Relay Loadability Tracker will be verified for accuracy, automated where possible and updated to ensure that the formulas are consistently applied by Protection Engineering. In addition, the Relay Loadability Tracker/PRC-023 Database will be updated to include all load responsive relay settings for BES Elements. This will be provided to Transmission Planning.

[Status Update #4](#)

Milestone Pending (Due: 10/26/2023)

Provide status update on Asset Baseline and improvements to Facility Ratings Tool.

[Status Update #5](#)

Milestone Pending (Due: 1/24/2024)

Provide status update on Asset Baseline and improvements to Facility Ratings Tool.

[Station Asset Baseline - Year 2](#)

Milestone Pending (Due: 4/23/2024)

NY will conduct another 35 station asset baseline surveys and NE will conduct an additional 31 station asset baseline surveys. All discrepancies will be updated in the Facility Ratings tools.

[Status Update #6](#)

Milestone Pending (Due: 7/22/2024)

Provide status update on Asset Baseline and improvements to Facility Ratings Tool.

[Relay Limits](#)

Milestone Pending (Due: 10/20/2024)

All applicable relay limits in the Relay Loadability Tracker provided by Protection Engineering - NE will be entered by Transmission Planning - NE into PG65. Line relay loadability limits have already been provided to Transmission Planning - NY and added to the Thermal Ratings Database.

[Status Update #7](#)

Milestone Pending (Due: 1/18/2025)

Provide status update on Asset Baseline.

[Station Asset Baseline - Year 3](#)

Milestone Pending (Due: 4/18/2025)

- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
- > Add New Mitigation Plan

> Search Mitigation Plans

> Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

- CREATE REVISION
- CREATE PDF
- ATTACHMENTS (0)
- GO TO CLOSURE FORM
- GO TO EXTENSION FORM

[Station Asset Baseline - Year 3](#)

Milestone Pending (Due: 4/18/2025)

NY will conduct another 35 station asset baseline surveys and NE will conduct an additional 29 station asset baseline surveys. All discrepancies will be updated in the Facility Ratings tools. Coordination between Transmission Planning - NE and Protection Engineering - NE for 'true-up' of data sets.

SECTION E: INTERIM AND FUTURE RELIABILITY RISK

E.1 Abatement of Interim BPS Reliability Risk: While your organization is implementing this Mitigation Plan the reliability of the Bulk Power Supply (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):

NGUSA has already completed several mitigation actions including mapping out the Facility Ratings process from beginning to end to identify gaps and opportunities to decrease the risk of future non-compliances. There is a risk that additional FAC-008 non-compliances will be found during the 3-year station baseline review but if found, they will be prioritized and corrected in a timely manner.

[Attachments \(\)](#)

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

Conducting a station baseline will ensure our Facility Ratings are accurate and the Facility Ratings Process map that was developed to identify gaps and opportunities will be addressed to maintain ongoing compliance and decrease the likelihood of future non-compliances.

[Attachments \(\)](#)

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 NPCC 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:
 - I am Elizabeth Spivak of National Grid USA
 - I am qualified to sign this Mitigation Plan on behalf of National Grid USA
 - I understand National Grid USA's obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4 (Compliance Monitoring and Enforcement



- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
 - > Add New Mitigation Plan
 - > Search Mitigation Plans
 - > Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

CREATE REVISION

CREATE PDF

ATTACHMENTS (0)

GO TO CLOSURE FORM

GO TO EXTENSION FORM

[Attachments \(\)](#)

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

Conducting a station baseline will ensure our Facility Ratings are accurate and the Facility Ratings Process map that was developed to identify gaps and opportunities will be addressed to maintain ongoing compliance and decrease the likelihood of future non-compliances.

[Attachments \(\)](#)

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 NPCC 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:
 - I am Elizabeth Spivak of National Grid USA
 - I am qualified to sign this Mitigation Plan on behalf of National Grid USA
 - I understand National Grid USA's obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4 (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))
 - I have read and am familiar with the contents of this Mitigation Plan
 - National Grid USA agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by NPCC and approved by NERC

SECTION G: REGIONAL ENTITY CONTACT

Please direct any questions regarding completion of this form to:

Jason Wang

NPCC

NPCC

212-205-7068

jwang@npcc.org

Attachment 6
Self-Report for PRC-023-4 R1
received July 31, 2019

Region	Name of Entity	NCR	Issue Tracking #	Standard	Req.	Description of Remediated Issue	Description of the Risk Assessment	Description and Status of Mitigation Activity
NPCC	NGUSA	NCR11171		PRC-023-4	R1	PRC-023-4, R1 requires that the relays meet “any one of” the 13 prescriptive criteria. During a PRC-023 compliance review, 10 relays were identified that required settings adjustments to meet R1. The corrected settings were issued to the field for timely completion.	<p>This potential non-compliance presented low risk to the BES due to the following reasons:</p> <p>1.)These lines/relays have never falsely tripped due to load since being in service. Therefore, despite being set lower than the required criteria per the standard, the buffer established for operability above WLTE provided by the setting was still large enough for the system to operate effectively and reliably.</p> <p>2.) Normal practice for system operators is to operate a line up to 100% of its published rating. The relay loadability is calculated as it can in some cases be the limiting element for the established rating. In an emergency, the system may be operated for a short period of time at levels that exceed the rating of the line. Calculated Short-Term and Long-Term Emergency ratings enable the system operators to increase the load and exceed the loadability limits for a short period without causing damage to the system. Protective relays are set to allow operation of the system at these emergency ratings. National Grid USA continued to reliably operate at the published ratings of the line.</p>	<p>To mitigate this issue, National Grid USA:</p> <p>1. Calculated new relay settings for these 10 relays that comply with PRC-023-4 R1, criterion 1, and issued the new settings to the field and will confirm that they have been put in service. (Due date: September 30, 2019)</p> <p>2. Developed and implemented a tracking spreadsheet to ensure that applicable relays are set in compliance with PRC-023, with settings calculated and based on current data. (Completed: July 26, 2019)</p>

Attachment 7
Mitigation Plan designated as NPCCMIT015700
for PRC-023-4 R1 submitted May 12, 2022



HOME

SYSTEM ADMINISTRATION

TFES

SELF-CERTIFICATIONS

SELF-REPORTS

SCOPE EXPANSIONS

COMPLAINTS

MITIGATION PLANS

> Add New Mitigation Plan

> Search Mitigation Plans

> Search Mitigation Plan

Closures

NON-COMPLIANCE

PERIODIC DATA SUBMITTALS

QUESTIONNAIRE

CREATE REVISION

CREATE PDF

ATTACHMENTS (0)

GO TO CLOSURE FORM

GO TO EXTENSION FORM



This item was signed by Elizabeth Spivak (elizabeth.spivak@nationalgrid.com) on 5/12/2022



This item was marked ready for signature by Lisa Codere-Lopez (lisa.codere-lopez@nationalgrid.com) on 5/4/2022



MITIGATION PLAN REVISIONS

	Requirement	NERC Violation IDs	Regional Violation Ids	Date Submitted	Status	Type	Revision Number
Select	PRC-023-4 R1.	NPCC2019021964	NPCC2019-201891	07/31/2019	Replaced with Revision	Informal	
	PRC-023-4 R1.	NPCC2019021964	NPCC2019-201891	05/12/2022	Region Accepted MP - Entity Implementing	Formal	1

SECTION A: COMPLIANCE NOTICES & MITIGATION PLAN REQUIREMENTS

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

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

SECTION B: REGISTERED ENTITY INFORMATION

B.1 Identify your organization

Company Name:	National Grid USA
Company Address:	40 Sylvan Road
	Waltham, Massachusetts 02451
Compliance Registry ID:	NCR11171
B.2 Identify the individual in your organization who will be the Entity Contact regarding this Mitigation Plan.	
Name:	Lisa Codere-Lopez



- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
 - > Add New Mitigation Plan
 - > Search Mitigation Plans
 - > Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

CREATE REVISION

CREATE PDF

ATTACHMENTS (0)

GO TO CLOSURE FORM

GO TO EXTENSION FORM

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

Name:

Lisa Codere-Lopez

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 Reliability Standard listed below.

Standard:

PRC-023-4

Requirement	Regional ID	NERC Violation ID	Date Issue Reported
R1.	NPCC2019-201891	NPCC2019021964	7/31/2019

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

Ineffective interdepartmental coordination or silos between departments. Contributing causes include gaps in procedures, insufficient training, and a failure to recognize the loadability impact of limiting transformers installed in series with applicable feeders on protection relays' settings.

[Attachments \(\)](#)

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

The violation affected 13 transmission lines, seven of which are 345 kV feeders. Eight of the 13 affected feeders are part of an Interconnection Reliability Operating Limit (IROL), which support the interconnected system and could cause cascading outages if they are unnecessarily exceeded by inadequate protection schemes.

[Attachments \(\)](#)

SECTION D: DETAILS OF PROPOSED MITIGATION PLAN

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

Protection Engineering will verify and update for consistency the Relay Loadability tracker formulas. In addition, the Relay Loadability tracker/PRC-023 Database will be updated to include all load responsive relay settings for PRC-023 Elements in order to apply applicable relay limits into NGUSA's Facility Ratings tool (PG-65).



- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
 - > Add New Mitigation Plan
 - > Search Mitigation Plans
 - > Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

CREATE REVISION

CREATE PDF

ATTACHMENTS (0)

GO TO CLOSURE FORM

GO TO EXTENSION FORM

SECTION D: DETAILS OF PROPOSED MITIGATION PLAN

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

Protection Engineering will verify and update for consistency the Relay Loadability tracker formulas. In addition, the Relay Loadability tracker/PRC-023 Database will be updated to include all load responsive relay settings for PRC-023 Elements in order to apply applicable relay limits into NGUSA's Facility Ratings tool (PG-65).

[Attachments \(0\)](#)

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:

4/30/2025

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

[Status Update #1](#)

Milestone Pending (Due: 8/2/2022)

Provide status update on Relay Loadability Tracker / PRC-023 Database.

[Status Update #2](#)

Milestone Pending (Due: 10/31/2022)

Provide status update on Relay Loadability Tracker / PRC-023 Database.

[Status Update #3](#)

Milestone Pending (Due: 1/29/2023)

Provide status update on Relay Loadability Tracker / PRC-023 Database.

[Status Update #4](#)

Milestone Pending (Due: 4/29/2023)

Provide status update on Relay Loadability Tracker / PRC-023 Database.

[Relay Loadability Tracker / PRC-023 Database](#)

Milestone Pending (Due: 7/28/2023)

The Relay Loadability Tracker will be verified for accuracy, automated where possible and updated to ensure that the formulas are consistently applied by Protection Engineering for PRC-023 circuits.



- HOME
- SYSTEM ADMINISTRATION
- TFES
- SELF-CERTIFICATIONS
- SELF-REPORTS
- SCOPE EXPANSIONS
- COMPLAINTS
- MITIGATION PLANS
 - > Add New Mitigation Plan
 - > Search Mitigation Plans
 - > Search Mitigation Plan Closures
- NON-COMPLIANCE
- PERIODIC DATA SUBMITTALS
- QUESTIONNAIRE

CREATE REVISION

CREATE PDF

ATTACHMENTS (0)

GO TO CLOSURE FORM

GO TO EXTENSION FORM

[Relay Loadability Tracker / PRC-023 Database](#)

Milestone Pending (Due: 7/28/2023)

The Relay Loadability Tracker will be verified for accuracy, automated where possible and updated to ensure that the formulas are consistently applied by Protection Engineering for PRC-023 circuits.

[Status Update #5](#)

Milestone Pending (Due: 10/26/2023)

Provide status update on any discrepancies found as a result of the Asset Baseline and improvements to Facility Ratings Tool affecting PRC-023.

[Status Update #6](#)

Milestone Pending (Due: 1/24/2024)

Provide status update on any discrepancies found as a result of the Asset Baseline and improvements to Facility Ratings Tool affecting PRC-023.

[Status Update #7](#)

Milestone Pending (Due: 4/23/2024)

Provide status update on any discrepancies found as a result of the Asset Baseline and improvements to Facility Ratings Tool affecting PRC-023.

[Status Update #8](#)

Milestone Pending (Due: 7/22/2024)

Provide status update on any discrepancies found as a result of the Asset Baseline and improvements to Facility Ratings Tool affecting PRC-023.

[Status Update #9](#)

Milestone Pending (Due: 10/20/2024)

Provide status update on any discrepancies found as a result of the Asset Baseline and improvements to Facility Ratings Tool affecting PRC-023.

[Status Update #10](#)

Milestone Pending (Due: 1/18/2025)

Provide status update on any discrepancies found as a result of the Asset Baseline and improvements to Facility Ratings Tool affecting PRC-023.

[True up of Data](#)

Milestone Pending (Due: 4/18/2025)



HOME

SYSTEM ADMINISTRATION

TFES

SELF-CERTIFICATIONS

SELF-REPORTS

SCOPE EXPANSIONS

COMPLAINTS

MITIGATION PLANS

> Add New Mitigation Plan

> Search Mitigation Plans

> Search Mitigation Plan Closures

NON-COMPLIANCE

PERIODIC DATA SUBMITTALS

QUESTIONNAIRE

CREATE REVISION

CREATE PDF

ATTACHMENTS (0)

GO TO CLOSURE FORM

GO TO EXTENSION FORM

True up of Data

Milestone Pending (Due: 4/18/2025)

Coordination between Transmission Planning - NE and Protection Engineering - NE for 'true-up' of data sets.

SECTION E: INTERIM AND FUTURE RELIABILITY RISK

E.1 Abatement of Interim BPS Reliability Risk: While your organization is implementing this Mitigation Plan the reliability of the Bulk Power Supply (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):

NGUSA has already completed several mitigation actions including creating new procedures and a tracking spreadsheet, implementing internal controls, and providing training. The additional mitigation activities will be completed to ensure there is consistency in the calculations and to automate formulas where possible to decrease the risk of future non-compliances. There is a risk that additional PRC-023 non-compliances will be found during this in depth Relay Loadability Tracker improvement but if found, they will be prioritized and corrected in a timely manner.

Attachments (0)

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

In addition to the mitigation activities that have already been completed, the proposed Mitigation Plan will reduce the risk of future violations. This will be accomplished through improvements to the Relay Loadability Tracker, whereby the risk of inaccuracies resulting from human miscalculation or judgmental error will be minimized. The process improvement to include relay limits in the Relay Loadability Tracker will also minimize the risk of future Facility Ratings-related non-compliances.

Attachments (0)

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 NPCC 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:
 - I am Elizabeth Spivak of National Grid USA
 - I am qualified to sign this Mitigation Plan on behalf of National Grid USA
 - I understand National Grid USA's obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4 (Compliance Monitoring and Enforcement



The new Align system is now operational, please login in [here](#)



NPCC Member Portal



Welcome Jason Wang



National Grid USA



Logout

HOME

SYSTEM ADMINISTRATION

TFES

SELF-CERTIFICATIONS

SELF-REPORTS

SCOPE EXPANSIONS

COMPLAINTS

MITIGATION PLANS

> Add New Mitigation Plan

> Search Mitigation Plans

> Search Mitigation Plan
Closures

NON-COMPLIANCE

PERIODIC DATA SUBMITTALS

QUESTIONNAIRE

CREATE REVISION

CREATE PDF

ATTACHMENTS (0)

GO TO CLOSURE FORM

GO TO EXTENSION FORM

[Attachments \(\)](#)

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

In addition to the mitigation activities that have already been completed, the proposed Mitigation Plan will reduce the risk of future violations. This will be accomplished through improvements to the Relay Loadability Tracker, whereby the risk of inaccuracies resulting from human miscalculation or judgmental error will be minimized. The process improvement to include relay limits in the Relay Loadability Tracker will also minimize the risk of future Facility Ratings-related non-compliances.

[Attachments \(\)](#)

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 NPCC 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:
 - I am Elizabeth Spivak of National Grid USA
 - I am qualified to sign this Mitigation Plan on behalf of National Grid USA
 - I understand National Grid USA's obligations to comply with Mitigation Plan requirements and ERO remedial action directives as well as ERO documents, including, but not limited to, the NERC Rules of Procedure, including Appendix 4 (Compliance Monitoring and Enforcement Program of the North American Electric Reliability Corporation (NERC CMEP))
 - I have read and am familiar with the contents of this Mitigation Plan
 - National Grid USA agrees to comply with, this Mitigation Plan, including the timetable completion date, as accepted by NPCC and approved by NERC

SECTION G: REGIONAL ENTITY CONTACT

Please direct any questions regarding completion of this form to:

Jason Wang
NPCC
NPCC
212-205-7068
jwang@npcc.org