

NERC Violation ID	Reliability Standard	Req.	Violation Risk Factor	Violation Severity Level	Violation Start Date	Violation End Date	Method of Discovery	Mitigation Completion Date	Date Regional Entity Verified Completion of Mitigation
NPCC2018019893	FAC-009-1	R1	Medium	Moderate	6/21/2007 – (when the Standard became mandatory and enforceable on the entity)	5/9/2019 (The date the entity provided the final corrected updated Facility Ratings to ISO-NE)	Self-Log (prior to performance of extent of condition review)	12/19/2019	3/31/2020
<p>Description of the Violation (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, or confirmed violation.)</p>				<p>On June 21, 2018, the Eversource Energy Service Company (the entity) provided a Self-Log to NPCC stating that, as a Transmission Owner (TO), it was in noncompliance with FAC-008-3 R6. During the investigation of the violation, and based on an extent of condition performed by the entity after the Self-Log, NPCC determined the violation was of moderate risk to the reliability of the bulk power system and, as such, did not qualify as a Compliance Exception. NPCC further determined that the entity was in violation of FAC-009-1 R1 from June 21, 2007 until December 31, 2012 and in violation of FAC-008-3 R6 from January 1, 2013 until May 9, 2019. For purposes of this violation, there was no substantive change in the entity’s compliance obligations under the two applicable Standard Requirements.</p> <p>During the preparation for an upcoming on-site audit, the entity discovered on May 10, 2018 that the in-use Facility Ratings on three 345 kV transmission lines and three 345/230 kV autotransformers in the Eastern Massachusetts Area (EMA) did not align with the entity’s Facility Rating Methodology (FRM). Upon further investigation, the entity determined that the violation was limited to the EMA, which has different internal controls, IT systems, and procedures than the other the entity areas. A full extent of condition was performed on all 262 EMA BES Elements, and the entity performed several tests of the Facility Ratings throughout the entity service territory. After the extent of condition, there were 65 instances where the in-use Facility Rating could not be correlated to the current FRM. The 65 instances are composed of issues with the following Elements: 12 345-kV Transmission Lines, 32 115-kV Transmission Lines, and 21 Autotransformers.</p> <p>For the 44 Transmission Lines, there were 14 instances where equipment in the field was modified, but the Facility Ratings were not updated. There were also three instances where the entity failed to consider series limiting components (station tap wires). The remaining 27 Transmission Line instances and all 21 of the autotransformer instances include the use of legacy calculations based on industry rating practices (IEEE, ANSI), but which did not follow the FRM or for which the calculations could not be replicated.</p> <p>For eight 115 kV Transmission Lines, the Facility Ratings did not consider the distance from the conductor to the ground.</p> <p>The new BES definition came into effect on July 1, 2016. Of the 65 instances in this violation, 59 of them apply to Elements that were part of the BES definition as of June 21, 2007. The remaining six instances (all 115-kV lines) apply to Elements that became part of the BES definition on July 1, 2016.</p> <p>By March 1, 2019, the entity completed the determination of the correct final Facility Rating for all 65 Elements, including the determination of the Interim Summer 2019 ratings. By May 9, 2019, the entity provided the interim and/or final updated Facility Ratings to ISO-NE.</p> <p>NPCC determined that the entity was in violation of FAC-009-1 R1 from June 21, 2007 until December 31, 2012 and then was in violation of FAC-008-3 R6 from January 1, 2013 until May 9, 2019.</p> <p>The entity is the TO for 869 BES Elements, made up of 103 345-kV lines, five 230-kV lines, three 138-kV lines, 521 115-kV lines, 66 Autotransformers, and 171 other types of station equipment. Based on the quantity of Facility Rating errors (65/869 = 7.4%), the Violation Severity Level is Moderate. Although the Violation Severity Level is Moderate, of the 65 Facilities, 30 Facilities had only a minimal (less than 3%) or positive increase change from the original rating for all Normal or Long Time Emergency (LTE) ratings.</p> <p>The current entity footprint in EMA is made up of the amalgamation of multiple electric companies over the last 60 years. The primary root cause of this violation was prior management’s insufficient review process of historical ratings associated with the EMA area and failure to perform a comparison with the current documented FRM in use by the entity. In addition, in 2016, a documented process did not exist that would consistently ensure that transmission fieldwork results were analyzed by Transmission Line Engineering before a field project was closed out.</p>					
<p>Risk Assessment</p>				<p>The violation posed a moderate risk to the reliability of the bulk power system. The entity’s failure to establish accurate Facility Ratings in 65 instances increased the potential for its Facilities to be operated outside of their correct capacity rating, creating the opportunity for equipment damage, incorrect modeling outputs and operating assumptions. In particular, the use of incorrect Facility Ratings in the Energy Management System (EMS) could negatively impact reliability under stressed system conditions as the System Operator may unknowingly operate to a higher rating than the equipment can accommodate. Planning and operating studies depend on the use of accurate book ratings such that the BES can withstand a variety of predetermined contingencies.</p>					

	<p>For the eight instances where there were conductor to ground clearance issues, three of them had equipment work performed in the field after the completion of the NERC FAC Alert review in 2012 and would have benefitted from the implementation of the correct controls to determine correct Facility Ratings.</p> <p>However, the risk posed by this violation was mitigated by a number of factors. Although there was a degree of inaccuracy involved, the EMA Facility Ratings were developed based on good utility practices using sound engineering judgement for the assumptions and methodology applied at the time. The entity provided historical data that showed that there were no instances where an effected Facility was historically operated in Real-time over its final corrected Facility Rating or its Summer or Winter 2019 Interim ratings.</p> <p>The entity is in a summer peaking load area. Of the 65 BES Elements with incorrect Facility Ratings, 27 had a corrected Summer Normal Facility Rating that was lower than the entity’s System Operators had been operating in the EMS before the discovery. Of those 27, the maximum percentage of rating inaccuracy was 24% of the Summer Normal rating on a 115 kV transmission line. The percentage of Summer ratings correction on BES Elements where the corrected Facility Rating is lower is as follows:</p> <ul style="list-style-type: none"> • 0 – 10% - 21 Elements • 11-20% - 5 Elements • 21% or more – 1 Element <p>No harm is known to have occurred.</p>
<p>Mitigation</p>	<p>To mitigate the violation and to prevent recurrence of the violation, the entity:</p> <ol style="list-style-type: none"> 1. Performed an extent of condition review by evaluating the existing Facility Rating calculations for all 262 Elements in the EMA area to determine if such Facility Ratings could be replicated based on the documented FRM. If the Facility Rating could not be replicated, it was recalculated using up to date field surveys and LiDAR data; 2. Calculated the correct Facility Ratings for all 65 Elements and input them into the Thermal Ratings Analyzer; 3. Provided the updated and correct Facility Ratings for all 65 Elements to ISO-NE; 4. Expanded its Thermal Ratings Coordinator (TRC) function into the EMA area. Created a new local Thermal Ratings Coordinator (LTRC) position in the EMA area. This person works with engineering and is responsible for facilitating the coordination and development of individual Facility Ratings in the EMA area. In particular, for all transmission related new construction, equipment modifications and/or upgrades, and certain maintenance projects, the TRC function ensures the consistent application of the Facility Rating milestones are documented and tracks each project associated Facility Rating implementation to completion; 5. Established a Facilities Rating Update Request System (SharePoint site) to document all Facility Rating changes for new construction, equipment modifications or data updates and document manager reviews and approvals; 6. Amended the overhead ratings procedure to reflect a consistent approach across all three states and to mandate that all new facility ratings must comply with documented methodology. 7. Incorporated the expectations associated with the entity Transmission Facility Ratings procedure into weekly Key Performance Indicator (KPI) meetings and into monthly project meetings where Facility Ratings projects are discussed; 8. Conducted 13 training awareness sessions to engineering, project management and field engineering/operations personnel to discuss the violation, emphasize the specific controls relevant to the audience and highlight the importance of compliance with FAC-008-3; and 9. Completed physical field remediation for the eight conductor to ground clearance issues.
<p>Other Factors</p>	<p>NPCC reviewed the entity's internal compliance program (ICP) and considered it to be a neutral factor in the penalty determination. Although the entity has a mature and effective NERC Reliability Compliance Program, the duration of the violation did not warrant awarding mitigating credit.</p> <p>NPCC considered the entity’s and its affiliate’s compliance history in determining the penalty. NPCC determined that the entity’s affiliate had one relevant previous violation. NPCC determined that the previous violation was not an aggravating factor because the root cause and the subject equipment of the previous violation differs from the instant violation. Additionally, the actions to mitigate the previous violation would not have prevented or identified this violation.</p> <p>NPCC applied mitigation credit in the penalty determination because the entity was cooperative throughout the enforcement process, admitted to the violation, and agree to settle the violation.</p>