

January 23, 2025

Mr. Charles Dickerson, President and CEO
Northeast Power Coordinating Council
1040 Avenue of the Americas
4th Floor
New York, NY 10018

Dear Mr. Dickerson:

We are writing to request that the Northeast Power Coordinating Council (“NPCC”) reassess its current treatment of bipole high-voltage direct current (“HVDC”) systems as a single contingency¹ and align with both the North American Electric Reliability Corporation’s (“NERC”) criteria² and European practice to instead treat the loss of both poles as two separate contingencies when considering new, modern HVDC systems. To our knowledge, no adverse reliability effects have been observed in regions utilizing more modern criteria.

The history of the current treatment as a single contingency in NPCC stems from the observed performance of the only large HVDC system currently operating in the region: the Phase II HVDC facility, which utilizes 1980s HVDC technology. The Hitachi contract for Phase II included three converter terminals and modifications to the existing ones. As Hitachi details:

The line was extended 1,100 km north from Des Cantons to the 2,250-megawatt (“MW”) Radisson terminal, located within the La Grande hydroelectric generating complex. The line was also extended over a distance of 214 km south from Comerford to a new 1,800 MW converter terminal at Sandy Pond, Massachusetts, and went into full commercial operation in 1990. In 1992, another terminal rated at 2,138 MW was made operational in this multiterminal HVDC system, located at Nicolet in the Montreal area.³

The Procedure to Protect for the Loss of Phase II was agreed to in 1990 by the predecessor grid operating entities to what are now ISO New England, NYISO, and PJM. That procedure sets a single source loss limit of 2,200 MWs, with a protocol for the three areas to check in hourly to determine if the single source limit should be adjusted downwards from 2,200

¹ NPCC Directory 1, Table 1, Event 7. https://cdn.prod.website-files.com/666c8295c6dc4ff2358b572d/66bc108dddcae24652c72cf70_directory-01-design-and-operation-of-the-bulk-power-system.pdf

² See e.g., NERC Standard TPL-001-5, Table 1, P1
<https://www.nerc.com/pa/Stand/Reliability%20Standards/TPL-001-5.pdf>

³ <https://www.hitachienergy.com/us/en/news-and-events/customer-success-stories/quebec-new-england>
last accessed, October 15, 2024.

MW, given system conditions.⁴ Although not in the protocol, these three areas have agreed to a floor to this redispatch of no less than 1,200 MW. In 2016, this floor was set as the single source loss limit for new resources in New England via a planning procedure,⁵ but was not filed with the U.S. Federal Energy Regulatory Commission (“FERC”) to adjust the FERC-approved 2,200 MW single source loss value.

Separately, the observed performance of Phase II as a bipole HVDC system indicated that the 1980s design often tripped both poles together. In light of this technology, it is not surprising that the NPCC regional criteria has treated the loss of both poles as a single contingency.

However, in the 32 years since the Phase II facility went into service, significant advancements in HVDC technology have been made. European nations have adopted a 525kV, multi-terminal ready standard that utilizes fast-clearing HVDC breakers and a 2 GW-per system bipole design carrying 1,000 MW on each pole.⁶ Northeast and mid-Atlantic states are actively collaborating with the U.S. Department of Energy (“DOE”) on coordinated, planned interstate and interregional transmission systems.⁷ The U.S. DOE is now funding additional work to ensure that standards are adopted for the buildout of shared transmission systems.⁸

Aside from the potential adjustment of the single source limit back to the FERC-approved 2,200 MW value for new resources, the alignment of the treatment of bipole systems with NERC criteria to treat the loss of two poles as two contingencies would also allow transmission planning and procurements to utilize emerging global standard and supply chain for HVDC systems. We ask that NPCC reassess the contingency standard treatment so that new HVDC systems energized after January 1, 2025 would treat the loss of either pole as a single contingency, and the loss of both poles as two distinct contingencies.

⁴ See T. Paradise, *et al.* “The Curious Case of the 1,200 MW Transmission Size “Limit” in New England” <https://www.oedigital.com/news/509993-the-curious-case-of-the-1-200-mw-transmission-size-limit-in-new-england>

⁵ ISO New England Planning Procedure No. 5-6, Interconnection Planning Procedure for Generation and ETUs, Appendix A, https://www.iso-ne.com/static-assets/documents/rules_proceeds/isone_plan/pp05_6/pp5_6.pdf

⁶ American Council on Renewable Energy, American Clean Power, *et al.*, “Letter to the Northeast States Collaborative on HVDC Transmission Standards” April 11, 2024 <https://acore.org/resources/letter-to-the-northeast-states-collaborative-on-hvdc-transmission-standards/>

⁷ Northeast States Collaborative on Interregional Transmission, Memorandum of Understanding, <https://energyinstitute.jhu.edu/wp-content/uploads/2024/07/MOU-Northeast-States-Collaborative-on-Interregional-Transmission.pdf>

⁸ Department of Energy, DOE Announces \$1.25 Billion Investment in Offshore Wind Transmission for the Atlantic Coast [press release], <https://www.energy.gov/gdo/articles/doe-announces-125-million-investment-offshore-wind-transmission-atlantic-coast>

We expect transmission planning activities to occur in the near future, with the New England states requesting their first transmission procurement in the next few months, and multistate planning efforts continuing over the next several months. We therefore request that the reassessment of the NPCC's regionally specific criteria for the loss of two poles of a modern, bipole HVDC system be aligned to national and international criteria and practice as expeditiously as possible.

Sincerely,

Kevin O'Rourke
Senior Vice President, Development and Public Affairs
American Council on Renewable Energy

Anne Reynolds
Vice President, Offshore Wind
American Clean Power Association

Francis Pullaro
President
RENEW Northeast