November 13, 2026

VIA ELECTRONIC FILING

Ms. Crystal Henwood
Regulatory Affairs Officer/Clerk
Nova Scotia Energy Board
3rd Floor
1601 Lower Water Street
P.O. Box 1692, Unit "M"
Halifax, Nova Scotia B3J 3S3

RE: *North American Electric Reliability Corporation*

Dear Ms. Henwood:

The North American Electric Reliability Corporation ("NERC") hereby submits Notice of Filing of the North American Electric Reliability Corporation of Revisions to the NERC Rules of Procedure Regarding Computational Load. NERC requests, to the extent necessary, a waiver of any applicable filing requirements with respect to this filing.

The filing includes revisions to add two new functional entities to the NERC registry criteria – Computational Load Owner and Computational Load Operator. If you have any concerns about these Rules of Procedure revisions, or you envision any unanticipated impacts from these changes, please reach out to NERC and we will work with you on addressing your concerns.

Sincerely,

/s/ *Sarah P. Crawford*

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BEFORE THE
NOVA SCOTIA ENERGY BOARD

North American Electric Reliability Corporation

NOTICE OF FILING OF THE NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION OF REVISIONS TO THE NERC RULES OF PROCEDURE REGARDING COMPUTATIONAL LOAD

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BEFORE THE
NOVA SCOTIA ENERGY BOARD

North American Electric Reliability Corporation	**)**
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NOTICE OF FILING OF THE NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION OF REVISIONS TO THE NERC RULES OF PROCEDURE REGARDING COMPUTATIONAL LOAD

The North American Electric Reliability Corporation ("NERC")[1] hereby submits proposed revisions to the NERC Rules of Procedure Appendices 2, 5A, and 5B. NERC submits that the proposed revisions, provided in Attachment 2 hereto, are just, reasonable, not unduly discriminatory or preferential, and in the public interest.

I. SUMMARY

NERC herein submits proposed Rules of Procedure revisions that add two new functional entities to the NERC registry criteria – Computational Load Owner and Computational Load Operator. Through this proposal, NERC takes steps to address the most immediate risks of large computational loads to the reliability of the Bulk Power System ("BPS") before impacts are more fully realized.

Over the past few years, NERC identified, through the Long-Term Reliability Assessments ("LTRAs"), reliability risks posed by the unprecedented amount of large load, such as data centers and large industrial facilities, connecting rapidly to the BPS.[2] Trends documented in the LTRAs

[1] The United States Federal Energy Regulatory Commission ("FERC") certified NERC as the electric reliability organization ("ERO") in accordance with Section 215 of the United States Federal Power Act. *N. Am. Elec. Reliability Corp.*, 116 FERC ¶ 61,062 (2006) [hereinafter ERO Certification Order].

[2] NERC, *2025 Long-Term Reliability Assessment* (Jan. 2026) at 9, https://www.nerc.com/globalassets/our-work/assessments/nerc_ltra_2025.pdf [hereinafter *2025 LTRA*]; NERC, *2024 Long-Term Reliability Assessment* (Dec. 2024, updated July 2025) at 8, https://www.nerc.com/globalassets/our-work/assessments/2024-ltra_corrected_july_2025.pdf [hereinafter *2024 LTRA*]. NERC develops the LTRA annually in accordance with the

showed higher demand growth than at any point in the last two decades.[3] In addition to the proliferation of large load interconnecting to the BPS, NERC observed emerging concerns over the electrical behavior of large data centers and other computational load. Specifically, large-scale customer-initiated load reductions during normal grid faults could lead to voltage and frequency excursions, posing risks to the operation of the BPS.[4] Moreover, existing registered entities could not perform all the actions needed to address the risks.[5] It became clear that computational load did not behave like other large load, and with the projected increase connecting to the grid, NERC needed to quickly understand how to mitigate any impacts from the aggregate risks posed by large amounts of load with unique electrical behaviors.

NERC launched the Large Loads Action Plan to address risks comprehensively and expeditiously,[6] engaging with its technical stakeholder committee to consider characteristics of these loads and how to mitigate impacts to the BPS. Similarly, the United States Secretary of Energy and the United States Federal Energy Regulatory Commission ("FERC") acknowledged the need for prompt mitigation of emerging risks through the Advance Notice of Proposed Rulemaking ("ANOPR") docket[7] and subsequently a July 16, 2026 order.[8] As a result of the work

NERC Rules of Procedure and Title 18, § 39.112 of the United States Code of Federal Regulations; this is also required by Section 215(g) of the United States Federal Power Act, which instructs the ERO to conduct periodic assessments of the North American BPS.

[3] *Id.*

[4] *2025 LTRA* at 28; *2024 LTRA* at 38.

[5] NERC, *Assessment of Gaps in Existing Practices, Requirements, and Reliability Standards for Emerging Large Loads* (March 2026), https://www.nerc.com/globalassets/our-work/guidelines/reliability/white-paper---assessment-of-gaps.pdf.

[6] Information on the NERC Large Loads Action Plan is available at https://www.nerc.com/initiatives/large-loads-action-plan.

[7] *Ensuring the Timely and Orderly Interconnection of Large Loads*, *Advance Notice of Proposed Rulemaking,* Docket No. RM26-4-000 (Oct. 27, 2025) [hereinafter ANOPR].

[8] *Order Directing the North American Electric Reliability Corporation to file Reliability Standard(s) Pertaining to Computational Load Integration*, 196 FERC ¶ 61,031 (2026) (hereinafter Computational Loads Order).

under the Large Loads Action Plan and the need highlighted by the United States Secretary of Energy and FERC, NERC determined now was the time to regulate computational loads.

While new electrical behavior and load growth drives the need to regulate these users of the BPS, it was long ago contemplated that such large customers may someday need to be included in the ERO Enterprise[9] regulatory framework.[10] Even with an expansive reliability authority, however, traditionally NERC has relied on identified risk, stakeholder input from across industries, and a targeted focus on the engineering and physics behind a reliable grid to determine which entities should be registered on its NERC Compliance Registry as subject to mandatory Reliability Standards. Historically, NERC focused on owners and operators of the Bulk Electric System ("BES"), a subset of BPS facilities, as those entities who must comply with Reliability Standards. However, recently, new risks led to expansion of the NERC Compliance Registry to include entities owning and operating non-BES generating resources (i.e. inverter-based resources) due to their impact to the BPS.[11]

Based on the newly emerging reliability risks and recommended mitigation, NERC is proposing for the first time to regulate certain large customers based on their impact on the reliable operation of the BPS. NERC launched extensive stakeholder outreach and held multiple public comment periods to revise the Rules of Procedure Appendices 2, 5A, and 5B that include provisions on registration processes and registry criteria to add new functional entity types to the NERC Compliance Registry. Once registered on the NERC Compliance Registry, these new

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[10] *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 at PP 98-99 (2006) [hereinafter Order No. 672], *order on reh'g*, Order No. 672-A, 114 FERC 61,328 (2006).

[11] The ERO Enterprise includes NERC and the six Regional Entities: Midwest Reliability Organization, Northeast Power Coordinating Council, ReliabilityFirst Corporation, SERC Reliability Corporation, Texas Reliability Entity, Inc., and Western Electricity Coordinating Council.

functional entity types would need to comply with mandatory applicable Reliability Standards.[12] The two new proposed functional entity types are proposed to be defined as follows:

- "Computational Load Operator" means the entity that operates a Computational Load Site.
- "Computational Load Owner" means the entity that owns and maintains a Computational Load Site.

These functional entities "own and maintain" or "operate" a "Computational Load Site", which is proposed to be defined as follows:

> one or more buildings, structures, or installations at a single location that
> 1) Primarily contains information technology infrastructure used for:
> - creating, executing, and delivering software applications and services;
> - artificial intelligence training, deployment, and delivery;
> - cryptocurrency mining; or
> - other computational activities at a data center; and
> 2) is supplied through electrical equipment that is connected to the BPS.

To appropriately identify those Computational Load Owners and Computational Load Operators who should be registered, NERC developed additional criteria for Computational Load Sites to tailor registration to the associated BPS risks. Specifically, NERC proposes to register entities who are Computational Load Owners or Computational Load Operators of a Computational Load Site "with a total connected Load greater than or equal to 50 MW that is supplied through electrical equipment connected at a voltage level greater than or equal to 100 kV from one or more points of connection."

NERC determined the proposed criteria address the aggregate risks posed by computational loads while also helping to ensure NERC does not capture smaller entities that pose less risk to the BPS at this time. The proposed thresholds include approximately 86% of the overall total (all sizes and voltages) amount of computational load projected by the end of 2027. Therefore, the threshold

[12] The foundational Reliability Standards were developed in Project 2026-02 Computational Loads and will be filed at a later date, https://www.nerc.com/standards/reliability-standards-under-development/2026-02-computational-loads.

encompasses a majority of those Computational Load Sites of the size and connected voltage that can create unforeseen and unique electrical dynamic behaviors when connected to the BPS. Nevertheless, NERC continues to monitor impacts of all computational load to assess whether there are any material risks to the BPS.

As described above, NERC exercises prudence in any expansion of its registry criteria, employing a targeted, impact-based approach to development. It is through this lens that NERC determined that now is the time to stay a step ahead of risk and register Computational Load Owners and Computational Load Operators.

II. NOTICES AND COMMUNICATIONS

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

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III. BACKGROUND

The following background information is provided below: (1) an overview of the NERC registration process and NERC registry criteria; and (2) the development process for the proposed Rules of Procedure revisions in this petition.

A. Overview of NERC Registration Process and Registry Criteria

NERC follows the process in the Rules of Procedure Appendix 5A to identify and register owners, operators, and users of the BPS that could materially impact the reliability of the BPS and should therefore be responsible for performing reliability-related functions in accordance with approved Reliability Standards. To further inform the registration process, NERC developed the Rules of Procedure Appendix 5B, NERC's Statement of Compliance Registry Criteria ("Registry Criteria"), which articulates the BPS users, owners, and operators that must be registered. Section I of the Registry Criteria in Appendix 5B states that owners, operators, or users of the BPS are candidates for registration. Section II of the Registry Criteria provides functional entity types into which registration candidates identified in Section I are assigned. Section III provides additional

threshold criteria for further refining certain entities identified as candidates for registration under Sections I and II. Should a candidate meet the Registry Criteria in Appendix 5B, then the candidate is registered, listed on the NERC Compliance Registry, and subject to compliance and enforcement of applicable Reliability Standards.[13]

B. Development of the Proposed Revisions to the NERC Rules of Procedure

NERC developed the proposed criteria through an open and inclusive stakeholder process. Under the NERC Large Loads Action Plan directed by the NERC Board in February 2025[14] and presented to the NERC Board in May 2025,[15] NERC worked with stakeholder subject matter experts to analyze the impact of large loads and initiated a three-pronged approach to mitigate risks of that impact: 1) development of NERC Alerts and Reliability Guidelines; 2) development of Registry Criteria through revisions to the NERC Rules of Procedure; and 3) initiation of a standards development project creating foundational Reliability Standards covering immediate risks posed by computational loads.[16]

Even before the first posting of proposed Rules of Procedure and throughout the development process, NERC launched a robust engagement effort to ensure stakeholders could meaningfully contribute input. NERC conducted outreach using public webinars and presentations to trade associations, including those representing the data center community and other computational loads, and other interested stakeholders. **Attachment 5** to this petition includes a

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[13] While registration decisions are based on the application of the Registry Criteria, NERC may determine whether an entity should be included or not included on the NERC Compliance Registry based on the entity's material impact on the reliability of the BPS. These materiality determinations are made by a NERC-led Registration Review Panel on a case-by-case basis, as detailed in Rules of Procedure Appendix 5A, Section III.D.

[14] *NERC Board of Trustees*, Minutes (Feb. 13, 2025), https://www.nerc.com/globalassets/who-we-are/board-of-trustees/minutes---board-of-trustees-open--february-13-2025.pdf.

[15] *NERC Board of Trustees*, Minutes (May 8, 2025), https://www.nerc.com/globalassets/who-we-are/board-of-trustees/minutes---board-of-trustees-open-meeting--may-8-20252.pdf.

[16] The foundational Reliability Standards were developed in Project 2026-02 Computational Loads and will be filed at a later date, https://www.nerc.com/standards/reliability-standards-under-development/2026-02-computational-loads.

detailed list of these engagements and demonstrates NERC's efforts to fully engage entities affected by the proposed revisions and who may be new to NERC processes.

Consistent with the NERC Bylaws[17] and Rules of Procedure,[18] NERC provided notice and opportunity for public comment on the proposed revisions to the Rules of Procedure. NERC posted initial proposed revisions to Appendices 2, 5A, and 5B for a 45-day public comment period from April 1 – May 15, 2026. NERC received 32 sets of comments from 44 commenters (**Attachment 4-B**). Upon considering comments, NERC further revised Appendices 2, 5A, and 5B and posted the updated proposed revisions for a 30-day public comment period from August 19 – September 18, 2026. NERC received 30 sets of comments from 35 commenters on the second posting (**Attachment 4-A**). NERC presented the proposed revisions and its consideration of comments to the NERC Board of Trustees ("Board") for approval. The Board approved the proposed revisions on October 8, 2026.[19]

IV. THE NEED TO ADDRESS COMPUTATIONAL LOAD

NERC, through its engineering staff and technical industry groups, assessed the impacts to the BPS of unprecedented load growth that has occurred over the past few years. Through that work, NERC determined that there are unique electrical characteristics and behaviors of computational loads that pose risks to the BPS. As described in this section, NERC determined certain aspects of these risks needed to be addressed through mandatory Reliability Standards applicable to the owners and operators of Computational Load Sites. Moreover, the United States Department of Energy ("U.S. DOE") and FERC identified the need to address the interconnection

[17] Article XI, Section 2 – Adoption, Amendment, and Repeal of Rules of Procedure.
[18] Section 1400 – Amendments to the NERC Rules of Procedure.
[19] *NERC Board of Trustees*, Open Meeting Agenda Item 5b (Oct. 8, 2026), https://www.nerc.com/globalassets/who-we-are/board-of-trustees/20261007_board_open_meeting_package.pdf.

of large loads to the transmission system.[20] NERC agreed with the need for action. Accordingly, NERC proposed development of new functional entities as part of the NERC Compliance Registry. In Section A, NERC describes the activities conducted under the NERC Large Loads Action Plan, including the work of the Large Load Working Group and NERC Alerts and Incident Reviews, to develop NERC's proposal. In Section B, NERC describes United States federal governmental involvement in addressing the reliability risks posed by large computational loads.

A. NERC Large Loads Action Plan

Over the past few years, NERC in its Long-Term Reliability Assessments identified unprecedented load growth, noting that demand growth is higher than at any point in the last two decades.[21] This projected increase in North American electricity demand is largely driven by computational load, such as data centers for artificial intelligence and other uses underpinning the digital economy, interconnecting with the BPS.[22] With this large increase, unique challenges include demand forecasting and planning for system behavior when some large loads are substantially larger and constructed more quickly than prior large loads using the BPS.[23] NERC recognized a need for quick and decisive action to address any potential impacts to reliability to support the exponential growth in an economy dependent upon reliable electricity. Accordingly, NERC initiated further study and collaboration with stakeholders to help ensure a reliable transmission system for all through its Large Loads Action Plan.

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20 ANOPR, *supra* note 11.
21 *2025 LTRA*, *supra* note 6 at 9; *2024 LTRA*, *supra* note 6 at 8.
22 *Id.*
23 *2024 LTRA* at 8.

1. NERC Large Loads Working Group

As part of the NERC Large Loads Action Plan, NERC engaged the Reliability and Security Technical Committee Large Loads Working Group ("LLWG")[24] to assess the risks to the reliability of the BPS posed by large loads. NERC documented this assessment in whitepapers, and NERC continues its work to better understand the reliability impacts to the BPS of emerging large loads.[25]

In the first whitepaper, entitled "*Characteristics and Risks of Emerging Large Loads*" ("Whitepaper 1") (**Attachment 1-A**), NERC identified characteristics of large loads and defined the reliability risks that they may pose to the BPS.[26] While of course the size and proliferation of large loads is a defining characteristic, NERC further recognized that certain large loads, particularly those that are power electronic loads (referred to interchangeably as computational loads in the whitepaper), such as data centers for supporting cloud computing, artificial intelligence, cryptocurrencies, and other digital services, have electrical characteristics that pose reliability risks to the BPS. The power electronic loads "consist of high-performance computing… systems in which large clusters of computing resources work in concert to perform complex analysis and other tasks. These loads are further characterized by high energy consumption, variable operational demand, and significant cooling requirements."[27] In addition, those new power electronic loads "use software controls to manage the load behavior rather than the

[24] Prior to April 2026, the Large Loads Working Group was known as the Large Loads Task Force ("LLTF"), and some documents developed before that date reference the LLTF.

[25] Current activities of the LLWG are outlined on its web page, https://www.nerc.com/who-we-are/committees/reliability-and-security-technical-committee-rstc/subcommittees-working-groups-and-task-forces/large-loads-working-group-llwg.

[26] NERC, *Characteristics and Risks of Emerging Large Loads: Large Loads Task Force White Paper* (July 2025), https://www.nerc.com/globalassets/who-we-are/standing-committees/rstc/whitepaper-characteristics-and-risks-of-emerging-large-loads.pdf [hereinafter Whitepaper 1].

[27] *Id.* at 3.

mechanical controls used by older motor loads."[28] These control systems enable computational loads to "rapidly change electricity consumption, creating previously unseen load behavior that can cause BPS planning and operational challenges."[29] Specifically, "[s]ome data center loads are known to have pulsed… characteristics, giving them extremely quick ramping potential that can introduce power quality and stability issues." Accordingly, Whitepaper #1 established that these characteristics are unique, new, and scaling quickly.

In the second whitepaper, "*Assessment of Gaps in Existing Practices, Requirements, and Reliability Standards for Emerging Large Loads*" ("Whitepaper 2") (**Attachment 1-B**), NERC identified potential gaps in Reliability Standards, as well as gaps in other industry standards and practices and interconnection requirements, in addressing the risks posed by the characteristics identified in Whitepaper #1.[30] Should those gaps remain, NERC then assessed the 1) likelihood of the risk occurring and 2) the severity of the risk to the BPS. Next, NERC analyzed whether mitigating actions by existing registered entities could close those gaps through new applicable Reliability Standards, interconnection requirements, or other means. The following risks were identified as 1) high likelihood; 2) high impact to the BPS; and 3) could not be adequately mitigated with existing registered entities:

- Transmission Adequacy
- Short-term Demand Forecasting
- Balancing and Reserves
- Lack of Real-Time and Operations Planning Time Frame Coordination

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28 *Id.*

29 *Id.*

30 NERC, *Assessment of Gaps in Existing Practices, Requirements, and Reliability Standards for Emerging Large Loads* (March 2026), https://www.nerc.com/globalassets/our-work/guidelines/reliability/white-paper---assessment-of-gaps.pdf.

- Lack of Proper Integration and Lack of Operational Readiness
- Frequency Stability for the Texas Interconnection
- Voltage Stability
- Oscillations (if high impact, then high likelihood)

Based on the identified multiple high-impact risks to the BPS that existing NERC registered entities cannot adequately address,[31] Whitepaper #2 recommended that NERC pursue registration of a type of entity (or types of entities) that could provide forecasting and modeling data, provide relevant information, coordinate with other functional entities, and comply with Operating Instructions or performance requirements (such as ride-through during disturbances), among other actions to be codified in Reliability Standards.[32]

2. NERC Alerts and Incident Reviews

Another component of the NERC Large Loads Action Plan, NERC published a Level 2 Alert on September 9, 2025 that provided additional insight into the impacts of the integration of large loads and industry preparedness.[33] In addition to recommendations for applicable registered entities to help mitigate risks to BPS reliability resulting from integrating large loads, the Level 2 Alert requested responses to questions intended to support NERC's evaluation of actions taken thus far in integrating large loads. NERC analyzed the responses to the Level 2 Alert and issued a public report (**Attachment 1-C**) that further highlighted the need for new functional entities and Reliability Standards.[34] Specifically, among other takeaways, the Level 2 Alert report noted that

[31] Chapter 8 of Whitepaper #2 describes the likelihood and impact of the risks and whether those risks can be adequately mitigated by the existing registered entities (Attachment 1-B at 35).

[32] *Id.* at 53 (Recommendation 1).

[33] NERC, *Industry Recommendation: Large Load Interconnection, Study, Commissioning, and Operations* (Sept. 9, 2025) [hereinafter Level 2 Alert], https://www.nerc.com/globalassets/programs/bpsa/alerts/2025/nerc-alert-level-2--large-loads.pdf.

[34] NERC, *Aggregated Report on NERC Level 2 Industry Recommendation: Large Load Interconnection, Study, Commissioning, and Operations*, (posted on website Mar. 17, 2026),

responding entities reported they could not gather modeling information or did not have direct coordination with large load entities, corroborating the gaps identified in Whitepaper #2.

While the work under the Large Loads Action Plan identified the potential risks to the reliability of the BPS, NERC determined to act quickly before these risks become actualized. Indeed, while not rising to the level of significant events, two incident review reports highlight the risks, particularly in light of the expected growth of computational load over the next year and into the future (**Attachment 1-D**).

The first incident involved large amounts of voltage-sensitive load reductions during a 2024 disturbance in the Eastern Interconnection.[35] In particular, "a 230 kV transmission line fault led to customer-initiated simultaneous loss of approximately 1,500 MW of voltage-sensitive load that was not anticipated by the BES operators."[36] During review of the incident, NERC determined that the 1,500 MW of load reduction was exclusively data center-type load.[37] The voltage did not rise to a level that posed a reliability risk, but operators did need to take action to reduce the voltage within normal operating levels.[38] NERC noted, "as the potential for this type of load loss increases, the risk for frequency and voltage issues also increases."[39]

The second incident review covered several load-loss events in the Electric Reliability Council of Texas ("ERCOT") Interconnection resulting from the unique ride-through characteristics of crypto-mining facilities. Specifically, crypto-mining facilities, a subset of computational load, depend on constant-power electronic power supplies that are highly sensitive

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https://www.nerc.com/globalassets/programs/bpsa/alerts/2025/aggregated-report-level-2-large-load-interconnection-study-commissioning-and-operations.pdf.

35 NERC, *Incident Review: Considering Simultaneous Voltage-Sensitive Load Reductions* (Jan. 2025), https://www.nerc.com/globalassets/our-work/reports/event-reports/incident_review_large_load_loss.pdf.

36 *Id.* at 1.

37 *Id.* at 2-3.

38 *Id.* at 1.

39 *Id.*

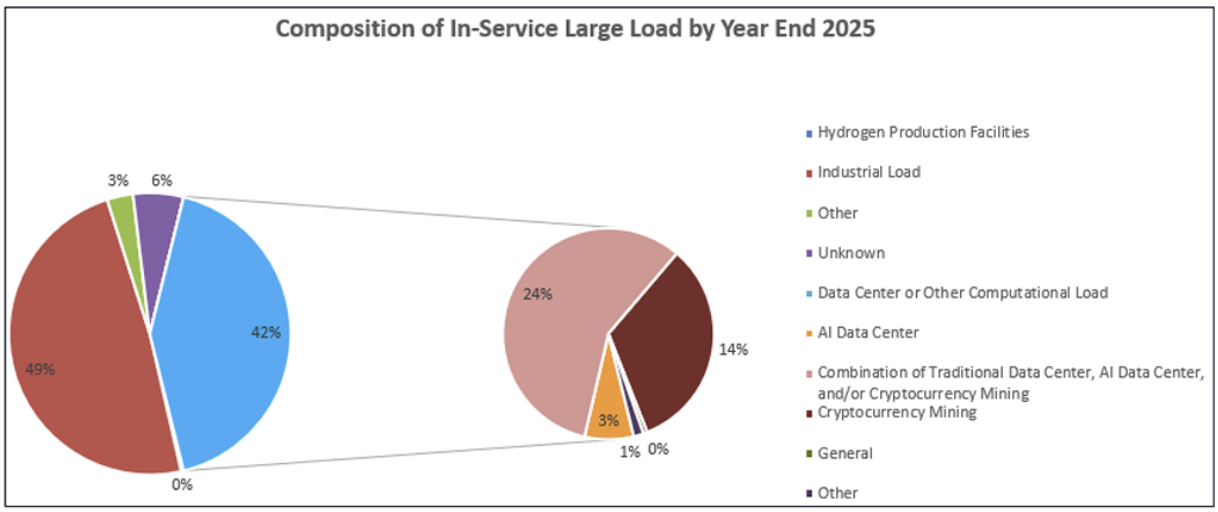
to voltage drops, which makes these facilities shut down almost instantly when voltage dips below a certain level.[40] As further described in the incident review, these characteristics of crypto-mining facilities have led to a series of indirect load loss in response to normally cleared transmission line faults on the system. Should these facilities continue to integrate and consume more MW on the grid, the need for grid operators to understand the load behaviors of these facilities becomes more urgent as sudden loss of large amounts of loads could eventually lead to reliability issues.

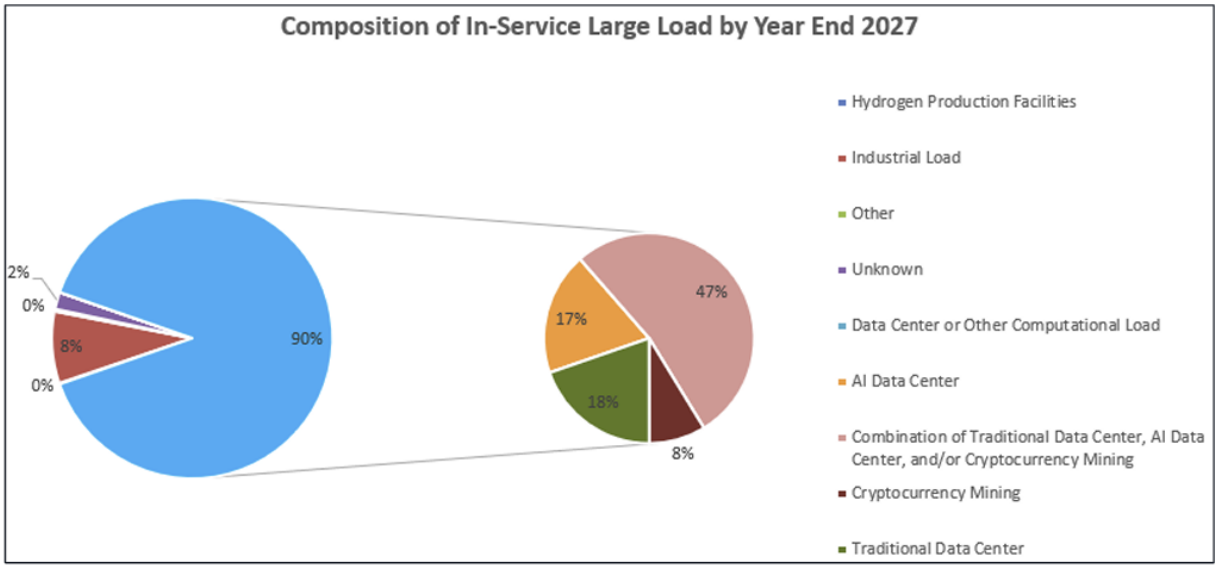
In fact, more disturbances have occurred since NERC performed the above incident reviews. A recent incident in July 2026 resulted in nearly 3,900 MW of customer-initiated load reduction from computational loads, causing system voltage to spike. NERC's review of this incident is ongoing as of the time of this filing.

3. Need for New Functional Entities

The severity of the aggregate risk posed by the types of occurrences outlined in the incident reviews grows with the amount of computational load expected on the system. In the Level 2 Alert report, NERC illustrated the changing composition of load types from the profile in 2025 to the projected profile by end of 2027:

[40] NERC, *Incident Review: Voltage-Sensitive Crypto Load Reductions* at 1 (Jan. 2026), https://www.nerc.com/globalassets/our-work/reports/event-reports/incident_review_considering_voltage-sensitive_crypto_load_reductions.pdf.





Computational load is expected to be 90% of large load by the end of 2027, demonstrating the potential for incidents involving computational load to have a greater impact on BPS reliability moving forward. Moreover, the Level 2 Alert report noted that some geographic areas have heavily concentrated amounts of computational load. Reliability Standards applicable to these types of entities would permit grid planners and operators to better understand the load profile, and what characteristics to expect, on their system.

As such, the Large Loads Action Plan led to the proposal for new registry criteria and Reliability Standards based on the identified gaps and aggregate risks posed by the proliferation of large loads connecting to the BPS. NERC determined the primary risk to address was the aggregate impact of the large amount of computational load, with its unique electrical behaviors, integrating into the system. Specifically, aggregate impact in this context refers to the impact of several computational loads connecting to the BPS in a similar manner where their aggregate characteristics impact BPS reliability. NERC continues to assess the impacts of all types and sizes of large load, but the need for registry criteria at present addresses the unique and impactful behavior of computational load specifically.

In the interim while NERC developed the proposed registry criteria, NERC pursued other risk-mitigating activities. In May 2026, NERC issued the Level 3 Essential Action Alert[41] outlining the actions registered entities should implement to address current risks posed by computational loads interfacing with the BPS. NERC issued this action alert in response to its observation that large load reductions and oscillations impacted real-time response of system operators. In addition, NERC issued a Reliability Guideline[42] with risk mitigation strategies for emerging large loads to ensure that large loads connected to the grid participate in practices that protect grid stability. NERC also continued to address gaps in knowledge with respect to data center load modeling through workshops and technical references.

[41] NERC Level 3 Essential Action Alert (May 4, 2026), https://www.nerc.com/globalassets/programs/bpsa/alerts/level-3-computational-load-alert.pdf.

[42] Reliability Guideline: Risk Mitigation for Emerging Large Loads (May 2026), https://www.nerc.com/globalassets/our-work/guidelines/reliability/RG_Risk-Mitigation-For-Emerging-Large-Loads.pdf.

The work under the Large Loads Action Plan demonstrated the need for Reliability Standards applicable to new functional entity types, leading to the proposed revisions to the Rules of Procedure in this notice.

B. ANOPR and FERC Directive

While NERC implemented its Large Loads Action Plan, the Secretary of the U.S. DOE and FERC also recognized the need for action to address the reliable integration of large loads with the transmission system. On October 23, 2025, the United States Secretary of Energy directed FERC to consider an Advance Notice of Proposed Rulemaking ("ANOPR") seeking public comment on interconnection of large loads to the interstate transmission system.[43] Issued pursuant to the U.S. DOE Secretary's authority under section 403 of the U.S. DOE Organization Act[44] for FERC consideration and final action, the proposed ANOPR directed FERC to initiate rulemaking procedures on potential reforms to enable the interconnection of large loads to the transmission system. Accordingly, on October 27, 2025, FERC issued a notice inviting comments on the proposed ANOPR.[45] Among other proposals on market issues, FERC invited comment on a proposal that NERC should review its Reliability Standards and determine whether new or modified registration categories should be developed.

On November 21, 2025, NERC submitted comments in the ANOPR proceeding. NERC expressed appreciation for the U.S. DOE Secretary's acknowledgement of the important role its Reliability Standards play in ensuring the BPS can meet the needs of large loads. NERC underscored its extensive activity and collaboration with stakeholders under the Large Loads Action Plan beginning in 2024. NERC's comments detailed how the Large Loads Action Plan

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43 ANOPR, *supra* note 11.

44 42 U.S.C. § 7173(a).

45 *Interconnection of Large Loads to the Interstate Transmission System*, *Notice Inviting Comments,* Docket No. RM26-4-000 (Oct. 27, 2025).

includes modifications to Reliability Standards and registry criteria, as needed, to mitigate any reliability concerns associated with large load interconnections. Since filings its initial comments, on March 20, 2026, NERC submitted an updated timeline highlighting NERC's plan to file revised registry criteria and Reliability Standards on or before December 31, 2026, with a Level 3 Alert in the interim to support reliability.

In the Computational Loads Order, FERC directed NERC to submit proposed registry criteria and an initial set of Reliability Standards for computational loads by December 31, 2026. This directive is consistent with NERC's Large Loads Action Plan timeline and demonstrates FERC's support for addressing these risks in a timely manner. In addition, FERC highlighted NERC's efforts to document recent grid disturbances resulting from computational loads on the grid. FERC noted that the purpose of the directive is to provide greater certainty in the timelines proposed in NERC's plan.

V. AUTHORITY TO REGISTER COMPUTATIONAL LOAD

As the ERO, NERC possesses the authority to register entities creating this impactful computational load as "users of the BPS." While owners and operators of the BPS are well-defined through NERC's registry criteria, NERC currently has limited registry criteria applicable to "users" of the BPS. Nevertheless, FERC precedent and legislative history of the U.S. Federal Power Act indicate that "users" of the BPS should be broadly defined to encompass all those who "use" the BPS, including large end-users of electricity connected to the BPS.

Legislative history of the U.S. Federal Power Act provides insight into the intent of the term "user" of the BPS. During debate on the amendment that incorporated user of the BPS into the U.S. Federal Power Act, the author of the amendment, United States Senator Craig Thomas, explained that "[t]he new reliability organization will have enforcement powers, with real teeth to ensure reliability. The amendment provides that mandatory reliability rules will apply to all users

of the transmission grid. There are no loopholes. No one will be exempt."[46] United States Senator Jeff Bingaman, who while opposing the Thomas Amendment was a proponent of a mandatory system of reliability rules, recognized that "[t]he reliability system needs to apply to all users. The rules need to be enforceable. There need to be penalties if you do not comply with the rules."[47]

Consistent with that intent, when FERC reviewed the initial suite of NERC Reliability Standards, it declined to define user of the BPS, leaving it to a case-by-case, risk-based analysis, stating:

> While we recognize the desire of some commenters for a concise, generic definition of "user of the Bulk-Power System," we are concerned that any attempt to define the term at this time will either be overly broad so as not to provide any helpful guidance or overly narrow so as to exclude entities that should be covered. The Commission believes that it has employed a reasonable approach by endorsing NERC's compliance registry process and requiring that each Reliability Standard identify the subset of users, owners and operators to whom that particular Reliability Standard applies.[48]

Nevertheless, FERC precedent indicates that "users" of the BPS subject to NERC regulation could include large end-use customers connected to the BPS. In discussing NERC's initial attempts to define "user" of the BPS, FERC stated its concerns that "[under NERC's proposed definition] a large industrial customer that receives electric energy directly from the [BPS] may not be defined as a user of the BPS, even though it may directly affect the reliability of the [BPS]."[49] Even in developing the narrow scope of its first set of registered entities, NERC

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46 148 Cong. S1874 (daily ed. Mar. 14, 2002) (statement of Sen. Thomas).

47 *Id.* (statement of Sen. Bingaman). NERC originally highlighted this legislative history in a notice of penalty proceeding. See NERC, *Notice of Penalty regarding U.S. Army Corps of Engineers – Tulsa District,* Docket No. NP09-26-000 at 6 (June 24, 2009). In issuing a determination on NERC's jurisdiction under section 215 in that penalty proceeding, FERC concluded that Congress intended section 215 to be comprehensive and was added to prevent cascading blackouts, as demonstrated by the provisions of the Federal Power Act and its legislative history. *See Order Addressing Applicability of Section 215 of the Federal Power Act to Federal Entities*, 129 FERC ¶ 61,033 (2009), *reh'g denied*, *order rejecting reh'g request*, 130 FERC ¶ 61,002 (2010).

48 *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, 118 FERC ¶ 61,218 at P 116, (2007) [hereinafter Order No. 693], *order on reh'g*, Order No. 693-A, 120 FERC 61,053 (2007).

49 Order No. 672, *supra* note 13 at P 99.

agreed with FERC "that Congress intended to give [FERC] broad jurisdiction over the reliability of the [BPS]," but NERC did not consider it necessary for FERC "to extend its jurisdiction to the limits in a single step."[50]

Accordingly, the expansive authority over owners, operators, and users of the BPS under section 215 of the U.S. Federal Power Act provides statutory and regulatory support for the proposed revisions to the NERC Rules of Procedure.

VI. PROPOSED REVISIONS TO THE NERC RULES OF PROCEDURE

NERC respectfully submits that the proposed revisions to Appendices 2, 5A, and 5B satisfy the directive in the Computational Loads Order to develop registry criteria to address the risks posed by computational loads. This Section VI discusses the proposed registry criteria for those computational load entities NERC proposes to register to comply with Reliability Standards. This section provides technical justification for the proposed criteria and how it addresses the risk identified.

To add new functional entities, NERC must revise Rules of Procedure Appendix 2 (Definitions Used in the Rules of Procedure); Appendix 5A (Organization Registration and Certification Manual); and Appendix 5B (Statement of Compliance Registry Criteria). These appendices work together as follows when NERC registers an entity: NERC and the Regional Entities follow the registration process outlined in Appendix 5A and assess an entity against the criteria provided in Appendix 5B, with the definitions in Appendix 2 providing clarity on capitalized terms used throughout the Rules of Procedures and its appendices. Section A discusses the terms added to Appendix 2. Section B summarizes the revisions to the registration process in

[50] Order No. 693, *supra* note 66 at P 59.

Appendix 5A. Section C presents the revisions to the Registry Criteria in Appendix 5B and provides technical reasoning for the capacity and voltage thresholds for Computational Load Sites.

A. Appendix 2

Appendix 2 (**Attachments 2-A** and **3-A**) to the NERC Rules of Procedure provides the definitions of terms used throughout the Rules of Procedure. The proposed revisions add the following three new terms: Computational Load Operator, Computational Load Owner, and Computational Load Site. Each of these terms is discussed below, beginning with Computational Load Site as it is nested in the other two definitions.

1. Computational Load Site

NERC proposes the following new definition in Appendix 2 of the NERC Rules of Procedure:

> "Computational Load Site" means one or more buildings, structures, or installations at a single location that
>
> 1) Primarily contains information technology infrastructure used for:
>
> - creating, executing, and delivering software applications and services;
> - artificial intelligence training, deployment, and delivery;
> - cryptocurrency mining; or
> - other computational activities at a data center; and
>
> 2) is supplied through electrical equipment that is connected to the BPS.

NERC developed the Computational Load Site definition in response to comments requesting clarity on the site boundaries to determine who owned or operated the site and to better calculate the total connected Load (**Attachment 4-B**). The proposed definition creates this boundary through three main concepts: 1) the site is a "single location"; 2) the site "primarily contains information technology infrastructure"; and 3) the site is "supplied through electrical equipment that is connected to the BPS." Each of these concepts is discussed in turn below.

As noted in NERC's consideration of comments on the August posting (**Attachment 4-A**), the "single location" concept has been used in other regulatory contexts related to generation, such as implementing the United States Public Utility Regulatory Policies Act ("PURPA"),[51] where FERC may consider certain physical or ownership characteristics of generation facilities to determine separate sites for Qualifying Facilities purposes. While NERC does not borrow all regulatory concepts from PURPA given the distinctions between load sites and generation, the use of "single location" in this instance was appropriate to convey that the MW calculation for purposes of the registry criteria threshold (discussed below) should not aggregate distinct sites that may be geographically near but unrelated operationally or do not share other characteristics.

While a Computational Load Site will be reviewed based on its specific factors to determine applicability, the registration process may consider many factors pertaining to the buildings, structures, or installations, including, but not limited to, ownership, shared or common infrastructure (e.g., auxiliary or cooling load), or coordinated use across the information technology infrastructure to perform its computational activities. However, single location does not necessarily refer to real estate boundaries, such as parcels.

A Computational Load Site is intended to "primarily" contain the information technology infrastructure that contributes to the electrical behavioral risk of computational loads. While several commenters suggested more quantitative measures of how much information technology infrastructure is part of a site, the use of "primarily" is intended to indicate that entities with the infrastructure performing computational activities that contribute to the unique impacts to the BPS are registration candidates, whereas load that is more industrial or primarily manufacturing is excluded. NERC declines to impose a specific percentage or amount of the 50 MW that must be

[51] 16 U.S.C. § 2601 et seq.

computational load at a site as that may arbitrarily exclude entities with the same reliability impact based on a percentage despite performing the same computational activities that pose an impact to the BPS.

NERC does not anticipate the lack of a numerical percentage will introduce issues in defining Computational Load Sites. For instance, NERC identified in the LLWG Whitepaper #1 that data centers and other computational loads' information technology-related equipment that consists of servers, storage, and networking gear driven by power electronics, "generally comprise[s] at least half of the data center's energy consumption. Data center industry experts state that IT-related equipment may make up 60–95% of a data center's total energy demand."[52]

To that end, as entities are registered, the site associated with their functions would be considered on a case-by-case basis such that Regional Entities reviewing each site would not look to register manufacturing facilities or generating facilities that may have certain computational equipment that helps run their manufacturing processes or generating operations. Rather, the Regional Entities would look to whether the buildings, structures, or installations on the site primarily contain information technology infrastructure that has been a driver of the unique characteristics of computational load with a reliability impact on the BPS.

In using the phrase "supplied through electrical equipment that is connected to the BPS," the focus of the Computational Load Site definition is not on the common point of connection, as may be typically defined in an interconnection agreement, but rather the kV level to which the electrical equipment supplying the Computational Load Site is connected to the BPS. In other words, this would typically be the high-side voltage level of the electrical equipment connected to the BPS that is supplying the Computational Load Site, which may or may not be the documented

[52] Whitepaper 1, *supra* note 44 at 4.

point of interconnection in an interconnection agreement. As Computational Load Owner and Computational Load Operator candidates go through the registration process, the applicable Regional Entities will assess the voltage level of the Computational Load Site to determine whether registration is required based on the Computational Load Site's connection to the BPS, irrespective of electrical equipment ownership.

2. Computational Load Operator and Computational Load Owner

In feedback on the April posting, commenters recommended the proposed criteria use the same "Owner" and "Operator" model for computational loads to remain consistent with the registration criteria currently in the NERC Rules of Procedure for Transmission Owner, Transmission Operator, Generator Owner, and Generator Operator.[53] Commenters stated that this structure is in place because, for transmission and generation facilities, there are often situations where the owner of the facilities is different from the operator of the facilities. This registration criteria structure allows the different entities to be responsible only for the activities that they are contractually set up for as the owner or operator.

NERC proposes the following new definition be included in Appendix 2:

> "Computational Load Operator" means the entity that operates a Computational Load Site.

Generally, a Computational Load Operator can impact the day-to-day control of the Computational Load Site's electrical operations or has communications capabilities with its transmission or reliability entities, as appropriate, or both, among other considerations as to operations.

NERC proposes adding the following new definition to Appendix 2:

> "Computational Load Owner" means the entity that owns and maintains a Computational Load Site.

[53] Appendix 4A, Comments of Data Center Coalition and Comments of Trade Associations.

NERC recognizes entities may have differing organizational structures and business relationships that led commenters to question how the "owns and maintains" language applies to scenarios where there may be multiple owners or there may be other entities who are responsible for maintaining a Computational Load Site. In the context of computational loads, the Computational Load Owner who "owns and maintains" the Computational Load Site helps establish that it is intended to be the entity that plays a more active role in ownership rather than a passive role. Specifically, the inclusion of "maintains" helps better define the role of the entity that will be considered as a candidate for registration so that NERC is not registering every passive owner with only a small financial interest in a Computational Load Site.

Moreover, NERC has been applying the "owns and maintains" language to the Transmission Owner and Generator Owner functions, and the various organizational structures of those entities, for many years. Within the NERC registration process, there are mechanisms available to help those generation or transmission projects, for example, understand which entity should be registered as a Generator Owner or Transmission Owner. Under the existing registration construct, entities may wish to establish bilateral contracts with other entities to take responsibility explicitly for the requirements applicable to the Generator Owner function, as appropriate.

B. Appendix 5A

Appendix 5A (**Attachments 2-B** and **3-B**) contains the process used by NERC and the Regional Entities to register certain functional entity types to which mandatory and enforceable Reliability Standards apply. NERC proposes to revise Appendix 5A to add "Computational Load Owner (CLO)" and "Computational Load Operator (CLOP)" as types of entities that are required to register on the NERC Compliance Registry. In addition, proposed revisions to Appendix 5A

include minor administrative corrections to remove references to figures previously removed from the Rules of Procedure.

C. Appendix 5B

Appendix 5B (**Attachments 2-C** and **3-C**) contains the specific criteria NERC and the Regional Entities use to identify which organizations may be candidates for registration for functional entity types. In accordance with the United States Federal Power Act, NERC must identify the owners, operators, and users of the BPS who have a material impact on the BPS. The proposed revisions in Appendix 5B add threshold criteria to identify those users of the BPS that should be registered as Computational Load Owners and Computational Load Operators as follows:

- Computational Load Owner of a Computational Load Site with a total connected Load greater than or equal to 50 MW that is supplied through electrical equipment connected at a voltage level greater than or equal to 100 kV from one or more points of connection.
- Computational Load Operator of a Computational Load Site with a total connected Load greater than or equal to 50 MW that is supplied through electrical equipment connected at a voltage level greater than or equal to 100 kV from one or more points of connection.

NERC determined the 50 MW and 100 kV thresholds based on NERC Level 2 Alert data as well as additional analysis and consideration of comments during the Rules of Procedure revisions process. In its initial proposal in the April posting, NERC based its threshold recommendation of 20 MW and 60 kV on data provided from responses to the Level 2 Alert. Transmission Owners, Resource Planners, Transmission Operators, Transmission Planners,

Balancing Authorities, Planning Coordinators, Distribution Providers, and Reliability Coordinators provided the total capacity of large loads on their system that are currently operational and expected to be in-service by the end of 2027, including the voltage level at the interconnecting point. The report concluded that large load additions are expected to change composition dramatically, moving from a split between industrial and computational load to almost entirely computational. Accordingly, NERC initially considered a 20 MW and 60 kV threshold would include a majority of entities contributing to the reliability risk posed by the connection of computational loads to the BPS.

After further analysis and consideration of comments on the initial proposal, NERC proposed the 50 MW and 100 kV threshold as it balances the need to include a large amount of computational load while also helping to ensure smaller, less impactful entities are excluded, as outlined in its technical reasoning document (**Attachment 1-E**). NERC's analysis, conducted using comprehensive data collected by a third-party who tracks existing and future data center activity,[54] revealed there is 41,827 MW of active data center load (at all voltages) as of June 2026 and an additional 37,675 MW under construction and expected to be in-service by the end of 2027. This amounts to a total of approximately 79,502 MW by year end 2027. Furthermore, NERC's voltage analysis revealed that for entities at 50 MW and above, most are likely to connect at 100 kV or more. This is because it is physically difficult for such loads to connect at smaller kV thresholds to achieve the desired level of reliability. In addition, at the 50 MW threshold, there was a small difference of only 2% of the overall total load comparing 100 kV to the previously proposed 60 kV threshold. The 2% of load represents those Computational Load Sites that

[54] NERC has a license with Aterio to access its "US Data Center Locations and Power Demand" data set which "provides a comprehensive inventory of data centers across the United States, including those currently operational, under development, and planned for future construction." Data includes individual building, campus, their locations, electric utility information, and load estimates.

generally have smaller capacity, are dispersed across the BPS, and represent a smaller portion of the collective load where they are located, thus representing less aggregate risk.

As a result, NERC estimates that the proposed 50 MW and 100 kV threshold should lead to the registration of owners and operators of approximately 68,288 MW from Computational Load Sites, as estimated in July 2026. This amount equals approximately 86% of the overall total computational load projected by the end of 2027 and includes the majority of Computational Load Sites that pose aggregate risks to the BPS. As such, the threshold encompasses those Computational Load Sites that are of the size and connected voltage that cause aggregate impacts, creating reliability risk, when connected to the BPS if not mitigated appropriately.

Essentially, the proposed 50 MW and 100 kV threshold ensures BPS-connected entities are subject to registration while excluding entities that have not been seen to negatively impact BPS reliability. While NERC maintains that its proposal is just and reasonable based on its analysis, NERC will continue to monitor computational total connected Load and connection voltage with respect to the aggregate risks and reserves the right to propose additional Registry Criteria changes in the future to address any risks to the BPS.

Respectfully submitted,

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Please find the attachments at this link:

Attachments 1-5