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January 22, 2026

Brian Johnson
Public Service Commission
600 East Boulevard Avenue
Bismarck, ND 58505

Re: Emmons-Logan Energy Storage, LLC/PU-25-209
Emmons-Logan Energy Storage, Emmons County
OAH File No. 20250262

Dear Mr. Johnson:

I am in receipt of the Commission's Findings of Fact, Conclusions of Law, and Order in above-referenced matter dated January 7, 2026. Accordingly, I am closing our file.

It appears Exhibit 11 was not provided to the Commission. I have included Exhibit 11 with this letter.

Sincerely,

A handwritten signature in blue ink that reads "Hope L. Hogan".

Hope L Hogan
Administrative Law Judge

cc: Casey Furey, counsel for Emmons-Logan Energy Storage, LLC via email
Zachary Pelham, counsel for Public Service Commission via email

Fire Hazards of Lithium Iron Phosphate (LFP) Battery Energy Storage Systems

Toxic Emissions, Health Risks, and Community Preparedness Gaps

Author: Nancy White - November 2025

Nancy White is a tireless advocate and activist for the causes of energy independence in Texas and the security of our electric grid. Her efforts have made numerous headlines in local, state, national, and international media. Nancy also has her very own TV show called Overlooked Critical Matters as well as President/Owner of a non-profit called Legislative Energy Action Foundation. She speaks out frequently concerning the security of our infrastructure/grid as well as transparency on vulnerabilities within BESS technology.

Executive Summary

Grid-scale battery energy storage systems (BESS) using lithium iron phosphate (LFP) chemistry are being built at a breakneck pace, often just a few hundred feet from homes, schools, farms, and water sources. When these facilities fail, the fires are effectively impossible to extinguish with standard firefighting resources, burn for days to weeks with repeated re-ignitions, and release massive toxic plumes containing hydrogen fluoride (HF), carbon monoxide, hydrogen cyanide, and cancer-linked PFAS “forever chemicals.” Real-world incidents have already required evacuations of 1,000–1,500 people for multiple days, closed highways, and created air-quality emergencies over areas measured in square miles. Most host communities (particularly rural and suburban volunteer fire departments) have neither the protective equipment nor the training to safely approach these events. Because documented evacuation zones already average one mile or more, siting these industrial chemical hazards mere hundreds of feet from vulnerable populations and agriculture is indefensible.

The recommendations below are not precautionary, they are the minimum necessary to align actual risk with current siting practices.



1. **Minimum One-Mile (5,280 ft) Setback Requirement from Residences, Schools, Hospitals, Daycares, and Places of Public Assembly**

Significance: In every major grid-scale BESS fire to date (Moss Landing 2025, Victoria Australia 2021, Grid Australia 2022, etc.), the initial isolation and evacuation zone has been at least one mile, often extended farther downwind. Hydrogen fluoride concentrations lethal within minutes have been measured hundreds of yards from the fire, and lower but still dangerous levels have been recorded more than a mile away. Current setbacks in most states (300–500 ft) fall entirely within the mandatory evacuation zone, meaning residents would have to flee through the toxic plume to reach safety. A one-mile buffer is the only way to ensure people are outside the immediate danger area before an incident even begins.

2. **One-Mile Setback from Property Lines of Any Privately Owned Parcel Not Part of the Project**

Significance: Many projects are sited immediately adjacent to neighboring homes and farms. A 500-ft setback measured to the property line still places the neighbor's house only 501 ft from the batteries. When a fire starts, that neighbor is already inside the evacuation zone and may be trapped by smoke, road closures, or reverse-911 delays. Requiring the buffer to the property line itself prevents developers from using narrow easements to claim compliance while leaving adjacent owners exposed.

3. **One-Mile Setback from Designated Agricultural Land, Active Farms, Ranches (of Any Scale), and Commercial Bee Apiaries**

Significance: HF and PFAS deposition from even a single event can render pasture and cropland toxic for grazing animals and pollinators for months to years. Ranchers have documented 20–30 % drops in conception rates and spikes in stillbirths after wildfire smoke exposure containing similar compounds. Bees are exquisitely sensitive to fluoride and PFAS, commercial pollinators worth tens of millions of dollars annually could be wiped out by a single plume. A one-mile buffer protects food security, rural economies, and the nation's pollination capacity.

4. **One-Mile Setback from Primary Surface Water Bodies, Wells, Aquifers, and Designated Source-Water Protection Areas**

Significance: Firefighting runoff and atmospheric deposition carry fluoride, heavy metals, and PFAS directly into waterways. Once PFAS enter an aquifer, they are effectively permanent, there is no practical remediation technology at scale. Many rural communities rely on private wells and small surface sources; a single incident could poison drinking water for generations. A one-mile buffer provides a realistic chance for containment booms and runoff diversion before irreversible contamination occurs.

5. **Independent, Third-Party Manufacturing Quality Audits with Mandatory Public Disclosure of Defect Rates**

Significance: EPRI data show manufacturing defects remain a major root cause of thermal runaway. Yet cell and module testing is currently self-reported by manufacturers with strong financial incentives to downplay issues. Publicly available, independent audit results would force accountability and allow communities to compare actual failure rates before approving projects.

6. **Mandatory Transition to Genuinely Fluorine-Free**

Significance: Virtually all current lithium-ion batteries—including “safer” LFP—rely on fluorinated electrolytes (LiPF₆) and PVDF binders that decompose into HF and PFAS during fire. Sodium-ion, lithium-metal-phosphate without fluorine, and solid-state designs without liquid electrolytes already exist at commercial scale. Continuing to deploy fluorinated chemistries when alternatives are available is a choice, not a technical necessity.

7. **Dedicated Federal and State Funding for Level A Chemical Suits, Continuous Toxic-Gas Monitoring, and Multi-Week Incident Training**

Significance: Most volunteer departments have zero Level A encapsulated suits and zero experience with hydrogen fluoride incidents. A single large BESS fire can require 24/7 monitoring for two weeks or more. Without pre-positioned equipment and trained personnel, firefighters become additional victims and communities are left defenseless.

8. Permanent Restoration of Local Zoning and Veto Authority

Significance: States like New York (RAPID Act), California, and others have stripped municipalities of the right to say “no” or impose meaningful conditions. When the state can override local government and force a facility that creates a mile-wide evacuation zone into a community that cannot fight it, democratic consent and basic risk management are abandoned.

9. Additional Protective Buffers Where Risks Are Especially Severe

- Two-mile minimum from organic-certified farmland and commercial bee operations (bees forage up to 5–7 miles; even low-level PFAS exposure collapses colonies).
- Five-mile exclusion from major airports and military airfields (HF plumes have grounded aircraft and corroded radar installations in past industrial accidents).

These are not extreme demands—they are the direct consequence engine from real incidents, peer-reviewed science, and the EPA’s own protective-action guidelines. Anything less continues to gamble with people’s lives, livelihoods, and environment for the sake of development speed. These recommendations protect residents, farmers, ranchers, beekeepers, first responders, and elected officials who refuse to accept unmanageable risk in their backyards.

Resources:

Larsson, F., et al. (2017). "Toxic fluoride gas emissions from lithium-ion battery fires." *Scientific Reports*, 7(1), 10018.

This study quantifies HF emissions (20–200 mg/Wh) from LFP and other lithium-ion batteries during thermal runaway, emphasizing corrosivity and exceedance of IDLH levels.

<https://pubmed.ncbi.nlm.nih.gov/28855553/>

Baird, A. R., et al. (2020). "Lithium-ion battery explosion aerosols: Identifying components and quantifying their mass distribution." *Aerosol Science and Technology*, 54(10), 1185–1196. (PMC9345575).

Analyzes aerosolized toxins including CO, HCN, and POF₃ from battery explosions, highlighting lethal quantities and dispersion risks.

<https://pmc.ncbi.nlm.nih.gov/articles/PMC9345575/>

O'Hara, M. A., et al. (2021). "Impacts from wildfires on livestock health, production, and welfare." *Animals*, 11(11), 3110.

Documents 20–30% drops in conception rates, stillbirths, and respiratory issues in livestock from smoke containing HF and particulates—analogueous to BESS plumes.

<https://pmc.ncbi.nlm.nih.gov/articles/PMC8614491/>

Spentzos, D., et al. (2024). "Lithium-ion battery components are a source of perfluoroalkyl substances." *Nature Communications*, 15(1), 1–12.

Identifies PFAS release from binders and electrolytes in LFP batteries during fires, linking to bioaccumulation and ecotoxicity.

<https://pubmed.ncbi.nlm.nih.gov/38977667/>

International Agency for Research on Cancer (IARC). (2023). "IARC Monographs Volume 135: Evaluation of the carcinogenicity of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS)." World Health Organization. (Updated 2025 classifications for battery-relevant PFAS variants).

Classifies PFOA as Group 1 (carcinogenic to humans) and PFOS as Group 2B (possibly carcinogenic), with links to kidney, testicular, and thyroid cancers.

<https://monographs.iarc.who.int/news-events/volume-135-perfluorooctanoic-acid-and-perfluorooctanesulfonic-acid/>

Industry and Incident Reports Electric Power Research Institute (EPRI), TWAICE, & Pacific Northwest National Laboratory (PNNL). (2024). "Insights from EPRI's Battery Energy Storage Systems (BESS) Failure Incident Database: Analysis of Failure Root Causes." EPRI Technical Report.

Analyzes global BESS failures, noting manufacturing defects as a key contributor (e.g., cell inconsistencies leading to thermal runaway).

<https://www.epri.com/research/products/000000003002030360>

Underwriters Laboratories (UL). "UL 9540A: Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems." UL Solutions. (Includes 2024–2025 test data on propagation and suppression limitations).

Demonstrates cascading failures in large-scale BESS and inefficacy of clean agents like FM-200.

<https://www.ul.com/resources/your-guide-battery-energy-storage-regulatory-compliance>

National Fire Protection Association (NFPA). (2023–2025). "NFPA 855: Standard for the Installation of Stationary Energy Storage Systems" (Incident Reviews and Supplements). NFPA. Reviews real-world BESS fires, emphasizing unmanageable re-ignitions and need for defensive tactics.

<https://www.nfpa.org/product/nfpa-855-standard/p0855code>

EPA protective action guidelines for HF releases recommend 1-mile initial zones. Real incidents (e.g., Moss Landing) confirm 1+ mile radii.

<https://www.epa.gov/radiation/protective-action-guides-pags>

U.S. Environmental Protection Agency (EPA). (2025). "Administrator Lee Zeldin Hosts Press Conference on Long Island Residents Concerned About Battery Energy Storage Systems (BESS)." EPA News Release (August 2025). Zeldin highlights community unreadiness for HF plumes and re-ignitions, criticizing state overrides like New York's RAPID Act.

<https://www.epa.gov/newsreleases/administrator-lee-zeldin-hosts-press-conference-long-island-residents-concerned-about>

National Institute for Occupational Safety and Health (NIOSH). "Immediately Dangerous to Life or Health (IDLH) Values." Centers for Disease Control and Prevention (CDC).

Establishes IDLH thresholds (e.g., 30 ppm for HF), exceeded in BESS plumes.

<https://www.cdc.gov/niosh/idlh/default.html>

CTIF International Association of Fire Services. (2025). "Fire at the Largest BESS in the World Led to Evacuation of 1,500 Residents in Moss Landing." CTIF News (January 2025).

Details the January 16, 2025, Moss Landing fire: 1,500 evacuated over 8 square miles due to toxic gases; fire burned for days.

<https://ctif.org/news/fire-largest-bess-us-led-evacuation-1500-residents-near-moss-landing-fire-left-burn-out>

Energy-Storage.News. (2025). "Fire at Moss Landing Energy Storage Facility: What We Know So Far." (January 29, 2025). Reports 1,200–1,500 evacuations, highway closures, and plume monitoring at the 300 MW/1,200 MWh site.

CNN. (2025). "Moss Landing Power Plant Fire: Residents Ordered to Evacuate Their Homes in Monterey County, California." (January 17, 2025).

Covers evacuation order for Moss Landing due to HF plume; schools closed for 4,500+ students over 70 square miles.

<https://www.energy-storage.news/fire-at-moss-landing-energy-storage-facility-what-we-know-so-far/>

Energy-Storage.News. (2023). "Tesla Megapack on Fire in 'Minor Incident' at Battery Storage Site in Australia." (October 24, 2023; references 2021 Victorian Big Battery fire).

Describes July 30, 2021, fire at 300 MW/450 MWh Victorian Big Battery: No propagation, but isolated to two units; no evacuations reported, but underscores testing risks.

<https://www.energy-storage.news/tag/storageaus/page/35/#:~:text=Tesla%20Megapack%20on%20fire%20in,battery%20storage%20site%20in%20Australia&text=A%20fire%20has%20taken%20place,stages%20of%20its%20commissioning%20phase.>

EPRI Storage Wiki. (2024). "BESS Failure Incident Database." (Updated January 2024; includes 2022 Australian events). Catalogs global incidents, including four South Korean BESS fires in 2022 and Australian cases, showing decreasing but persistent failure rates.

https://storagewiki.epri.com/index.php/BESS_Failure_Incident_Database

U.S. BESS interconnections (>6,000 projects, tens of GW) sourced from Wood Mackenzie Q3 2025 US Energy Storage Monitor

<https://www.woodmac.com/reports/power-markets-us-energy-storage-monitor-q3-2025-150407414/>