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**Kevin Dempsey**  
President and Chief Executive Officer

March 27, 2023

**Submitted via email to:**

**[DistributionTransformers2019STD0018@ee.doe.gov](mailto:DistributionTransformers2019STD0018@ee.doe.gov) and via [www.regulations.gov](http://www.regulations.gov)**

Mr. Francisco Alejandro Moreno  
Acting Assistant Secretary  
U.S. Department of Energy  
Office of Energy Efficiency and Renewable Energy  
1000 Independence Avenue SW, Washington, DC 20585-0121

**Re: Docket No. EERE-2019-BT-STD-0018, Energy Conservation Program:  
Energy Conservation Standards for Distribution Transformers, Notice of  
Proposed Rulemaking (NOPR) [RIN: 1904-AE12]**

Dear Acting Assistant Secretary Moreno,

The American Iron and Steel Institute (AISI) submits the following comments in response to the Department of Energy's (DOE) notice of proposed rulemaking (NOPR) regarding energy efficiency standards for distribution transformers that was published on January 11, 2023.<sup>1</sup>

The proposed rule would have the effect of requiring all transformers to be redesigned and all manufacturing lines to be retooled to support transformer cores produced from amorphous metal (AM) ribbon in replacement of Grain Oriented Electrical Steel (GOES) by 2027. The proposal would have detrimental impacts on electric grid reliability and domestic manufacturing, while achieving very limited gains in energy efficiency. The DOE should withdraw this proposed rule and consult with domestic stakeholders to craft an alternative approach to obtain the goals that the agency desires.

### **Background on the American Steel Industry**

AISI serves as the voice of the American steel industry in the public policy arena and advances the case for steel in the marketplace as the preferred material of choice. AISI's membership is comprised of integrated and electric arc furnace steelmakers, and associate members who are suppliers to or customers of the steel industry.

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<sup>1</sup> *Energy Conservation Program: Energy Conservation Standards for Distribution Transformers*, 88 Fed. Reg. 1722 (Jan. 11, 2023).

The American steel industry supports nearly two million jobs and contributes \$520 billion to the economy. The industry is essential to our national and economic security and our critical infrastructure, including critical aspects of electricity generation and the electric grid. Further, the American steel industry is the cleanest and most energy efficient of the leading steel industries in the world. Of the major steel producing countries, the U.S. has the lowest CO<sub>2</sub> emissions per ton of steel produced and the lowest energy intensity.<sup>2</sup> By contrast, Chinese steel production creates carbon emissions that are almost double that in the U.S per ton of steel produced.

### **Steel Industry Concerns with DOE Proposed Rule for Distribution Transformers**

AISI has significant concerns with the DOE NOPR pertaining to the efficiency requirements for liquid-immersed distribution transformers, low voltage dry-type transformers and medium voltage dry-type distribution transformers. In particular, AISI is concerned that the anticipated result of the rule would be for distribution transformer cores to be produced from AM ribbon instead of GOES, as DOE has indicated.<sup>3</sup>

Amorphous metal is an extremely brittle material that is largely untested and underutilized by transformer manufacturers. Additionally, the existing supply of this alternative material and the substrate needed to produce it is foreign-sourced. By sharp contrast, GOES is produced in the United States from the initial melting stage and currently forms the cores of the distribution and power transformers that serve as the backbone of the U.S. electric grid. As a result, the proposed rule could impose unnecessary cost burdens for transformer manufacturers and unnecessarily delay the delivery of its critical products, given the prohibitive investments required to ramp up production of AM transformers.

AISI also believes that there is a significant risk to national security if this NOPR is finalized and implemented as drafted. The proposal to replace transformer markets demand for GOES materials with those for AM could result in the elimination of domestic GOES production overall. If that were to occur, most of this raw material supply will likely be sourced from China and other foreign countries, which constitute a national security and economic security risk. The transformer supply chain would become wholly dependent on foreign sources, harming the U.S. domestic transformer manufacturers and eroding the resilience of supply chains for the domestic energy

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<sup>2</sup> Hasanbeigi, A., *Steel Climate Impact - An International Benchmarking of Energy and CO<sub>2</sub> Intensities*, Global Efficiency Intelligence, April 2022.

<sup>3</sup> U.S. Dep't of Energy, DOE Proposes New Efficiency Standards For Distribution Transformers, <https://www.energy.gov/articles/doe-proposes-new-efficiency-standards-distribution-transformers> (DOE explains that “[a]lmost all transformers produced under the new standard would feature amorphous steel cores”).

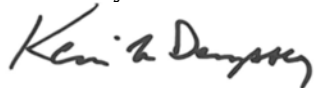
sector. That result would be directly at odds with federal policy goals of expanding domestic clean manufacturing. If this proposed standard were promulgated, the resultant disruption to the domestic transformer supply chain would stand to undermine the bold energy and climate goals of President Biden's administration, including rapid electrification of the American vehicle fleet.

Finally, the benefits of the DOE NOPR proposal would be limited, given that distribution transformers currently must be manufactured to high efficiency standards. As was stated during the February public meeting on the NOPR, at heavier loads, GOES-based transformers are more efficient than AM-based transformers.<sup>4</sup> Therefore, the limited efficiency advances claimed in the NOPR do not nearly outweigh the other serious concerns detailed above.

### Summary

AISI believes there are significantly negative impacts of this proposed rule from the DOE on distribution transformers. Those potential negative impacts regarding the national manufacturing base, national security, and the electric grid are not justified given the extremely limited energy efficiency benefits expected from the proposed rule. DOE should withdraw the NOPR and instead continue consultation with key domestic stakeholders to produce an alternative approach that would both allow for energy efficiency while strengthening the domestic transformer supply chain.

Sincerely,

A handwritten signature in black ink that reads "Kevin M. Dempsey". The signature is written in a cursive, flowing style.

Kevin M. Dempsey  
President and CEO

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<sup>4</sup> *Energy Conservation Program: Energy Conservation Standards for Distribution Transformers*, 88 Fed. Reg. 1722, 1755 (Jan. 11, 2023); Transcript of Proceedings in the Matter of: Notice of Proposed Rulemaking (NOPR) for Distribution Transformers (Standards) (Feb. 16, 2023) at 42-43 ("The losses on the amorphous core transformers are 50-percent higher than they are on the silicon iron transformers across the board ... amorphous core transformers at the higher loads are going to be less efficient than the silicon iron transformers.").