

Amy Neal

Who is commenting? *(choose the best fit)*

Representative of a product manufacturer(s)

If you are commenting as a representative, what is the name of the entity you are commenting on behalf of?

Emerson Electric

If you represent a product manufacturer or industry group, what industry(ies) do you represent?

Industrial Automation Monitoring and Control

If you represent a product manufacturer, what types of components, products, or product categories do you manufacture that you will be requesting a CUU determination for?

Industrial Automation Monitoring & Control Products
- Pressure, Flow, Level and Temperature Measurement
- Corrosion, Erosion & Heat Trace Monitoring
- Energy Monitoring & Management
- Industrial Test & Measurement Instruments
- Density & Viscosity Measurement
- Liquid, Flame, & Gas Detection
- Machinery Monitoring, Protection & Maintenance
- Marine Measurement & Analysis
- Distributed Control Systems
- Hygienic & Sanitary Measurement
- Vibration Sensors & Welding Machines
- Electrical Power Distribution & Control
- Valves, Regulators, and Actuators

Do you have any recommended changes or other considerations that you think the MPCA should take into account when defining the term "essential for health, safety, or the functioning of society"? *(Please review the proposed definitions in the rule concept document prior to answering)*

No recommended changes

Do you have any recommended changes or other considerations that you think the MPCA should take into account when defining the term "alternative"? *(Please review the proposed definitions in the rule concept document prior to answering)*

No recommended changes

Do you have any recommended changes or other considerations that you think the MPCA should take into account when defining the term "reasonably available"? *(Please review the proposed definitions in the rule concept document prior to answering)*

No recommended changes

When considering the proposed definition of “product category”, how broadly should the agency group product categories? (*Examples: “vehicles” versus “sedans, SUV’s, vans, trucks, RV’s” or “printers” versus “receipt printers, thermal printers, label printers, residential printers, commercial printers, etc.”*)

Emerson recommends that the MPCA adopt four-digit Harmonized Tariff System (HTS) codes as one of the formal methods for organizing product groupings. For example, 9026 describes instruments and apparatus for measuring or checking the flow, level, pressure or other variables of liquids or gases. See Comment # 1 in the uploaded document.

Should each request for a CUU determination be limited to a single product category, or should applicants be allowed to submit a request for a CUU determination for multiple product categories?

Applicants should be allowed to submit a single application covering multiple CUUs, organized based on a logical grouping approach using a proven standardized framework such as Harmonized Tariff System (HTS) codes. See Comment # 2 in the uploaded document.

What safety or other standards require the use of PFAS in a product? (*Please include the specific citation*)

Because the standards specify performance rather than chemistry, PFAS (fluoropolymers) becomes a de facto requirement, as it is currently the only practical way to meet certain safety standards.

For example, ATEX material requirements ensure that products used in explosive atmospheres are constructed from materials and designs that prevent them from becoming ignition sources. They form part of the legally binding essential health and safety requirements under ATEX 2014/34/EU, including durability, temperature limits, sparking avoidance, ignition protection methods, and conformity marking.

The agency is seeking feedback on the potential that the initial positive CUU determination duration for existing products will expire eight years from the date of issuance regardless of product category. This is intended to stagger renewal deadlines and ease the administrative burden of processing renewals.

- Do you have any concerns about unintended consequences with this proposal?
- Do you have any alternative recommendations to stagger renewal deadlines?

11 Q1: Yes, inequitable PFAS CUU validity periods are a significant concern because it discourages early submissions and could create an unfair advantage for companies with longer validity periods. Furthermore, if the early CUU is made public, close followers will have an unfair advantage because they have access to the information that may have been used in a successful CUU. See comments # 3 & # 4 in the uploaded document.

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Q2: To promote consistent award durations and avoid application bottlenecks at each phase of the CUU process, the MPCA could adopt an accelerated CUU review timeline for

in-state companies; five years is recommended. Establishing a defined “open window”, such as 4-6 months, for in-state manufacturers to submit CUU applications would formally recognize their economic contributions to Minnesota. Local companies invest in facilities, workforce development, and supply chains, and a tailored CUU timeline would help sustain and reinforce that commitment. See comment # 4 in the uploaded document.

The MPCA has developed a preliminary list of potentially eligible data categories that may be considered for trade secret requests. *(Please review the rule concept document for the list of potentially eligible data)*

- Do you have any concerns about unintended consequences with this proposal?
- Do you have any alternative recommendations for data that should or should not be eligible for trade secret requests?

No concerns and no recommendations.

What are the potential ongoing costs to society if the commissioner issues a positive currently unavoidable use determination for the continued use of PFAS within a product or product category? *(For example: environmental, human health, or remediation costs)*

As a downstream user utilizing only polymeric PFAS components in finished products, Emerson’s potential future societal costs are largely confined to the end-of-life waste management associated with those products. Importantly, industrial products reaching end-of-life are professionally managed, supporting responsible and controlled waste management approaches.

For manufacturers: Administrative cost of requesting a CUU determination (Part 1 of 2). *Please provide your best estimates or rough orders of magnitude (for example "approx. 200 hours"). Precise accounting data is not necessary to answer this question.*

If your company currently possesses information regarding intentionally added PFAS (to the CAS number level) for all components in your product lines, please estimate the number of technical staff hours that were required to establish this baseline.

More than 500 hours

For manufacturers: Administrative cost of requesting a CUU determination (Part 2 of 2). *Please provide your best estimates or rough orders of magnitude (for example "approx. 200 hours"). Precise accounting data is not necessary to answer this question.*

If your company does not possess information regarding intentionally added PFAS (to the CAS number level) for all components in your product lines, please estimate the number of technical staff hours needed to obtain this data from your Tier 2 or 3 suppliers for a single

product line.
Not applicable

For manufacturers: Expenditure considerations when seeking non-PFAS alternatives (Part 1 of 2). *Please provide your best estimates or rough orders of magnitude (for example "primary cost is CapEx"). Precise accounting data is not necessary to answer this question.*

If you have identified a technically viable non-PFAS alternative for one of your products that contains intentionally added PFAS, does implementing this alternative require Capital Expenditure (such as purchasing new molds, retooling machinery) or primarily Operational Expenditure (such as purchasing more expensive raw materials)?

- Please estimate the ratio of Capital Expenditure to Operational Expenditure (or indicate which category is the dominant cost driver).

As a downstream user that incorporates only polymeric PFAS components into finished products, the CAPEX to OPEX ratio associated with PFAS replacement is best understood by our suppliers. However, based on our close collaboration with them during a sensitive material replacement project, we can provide a rough order of magnitude estimate. For a semi-complex product produced at low volumes (on the order of thousands per year), the CAPEX to OPEX ratio for implementing a PFAS alternative typically ranges from approximately 1:5 up to 1:20. Direct labor and utilities are key drivers of OPEX in these scenarios. Please note that Emerson has already replaced PFAS in applications where a technically feasible alternative exists.

For manufacturers: Expenditure considerations when seeking non-PFAS alternatives (Part 2 of 2).

If you have not identified a technically viable non-PFAS alternative for one of your products that contains intentionally added PFAS, have you conducted a Research & Development (R&D) feasibility study?

- If so, what was the cost of that study?

Emerson has conducted alternative studies, leveraging 3rd-party consultants to challenge its own studies, and continues to monitor material breakthroughs.

The cost of these studies is ongoing and, in total, roughly exceeds 500 staff hours per year.

For manufacturers: Research and development safety validation cycles.

What is the typical duration of the R&D and safety validation cycle for a reformulated product in your sector (from concept to market entry)?

Does this cycle align with the 5-year renewal period typically associated with regulatory exemptions?

- If not, please explain the specific technical barriers that would require a longer validation period.

18 Q1: The cycle for industrial products is typically 5-8 years, with the high-end of the range reserved for highly complex products.

18Q2: Once technically feasible alternatives are available, the time needed for careful and comprehensive engineering work that accompanies a material change in a highly regulated segment can be in excess of five years, especially in highly regulated segments. Activities to be conducted include finding and evaluating alternatives, modifying designs, re-qualification testing and re-certification (ATEX, Pressure Equipment Directive 2014/68/EU), supply chain cadence change, and customer relations. Some of the standards that are directly applicable are:
• IEC 60079-0 (Explosive atmospheres: General equipment requirements)
• IEC 60079-11 (Explosive atmospheres – Part 11: Equipment protection by intrinsic safety)
• IEC 60079-1 (Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures)
• UL 1203 (Explosion Proof and Dust ignition proof electrical equipment for use in hazardous locations)
• ANSI/ISA 12.27.01 (Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids

Do you have any additional questions or comments regarding the PFAS in products: Currently unavoidable use rule? *(Please note that we may be unable to respond to specific questions regarding rule content in this phase of the rulemaking process)*
None



March 29, 2026

By Upload

Katrina Kessler
Commissioner
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Subject: Request for Comments on the Draft Rule Concept Summary for PFAS in Products:
Currently Unavoidable Use (CUU) Rule

Dear Ms. Kessler:

Emerson Electric Co. appreciates the opportunity to provide comments on the Minnesota Pollution Control Agency's (MPCAs) Draft Currently Unavoidable Use Rule Concept Summary for PFAS in Products. We commend MPCA for giving industry the opportunity to participate in this important process.

Emerson Electric Co. (NYSE:EMR), an \$18 billion company headquartered in St. Louis, Missouri, operates extensively across the United States with more than 29,000 employees and 50 manufacturing facilities, including over \$4 billion of revenue generated from its Minnesota operations. The company is committed to delivering Industrial Automation Monitoring & Control (IAMC) systems that prioritize safety for end-users and environmental protection, aligning closely with MPCA's objectives.

Emerson's products serve a vital role in advancing key industries, including renewable energy, medical technology, and semiconductor manufacturing, by enabling more sustainable operations while enhancing productivity, energy security, and system reliability. Our solutions provide substantial economic, societal, and environmental benefits to Minnesota and beyond.

Our concerns regarding the CUU draft rule center on the timing of CUU determinations in advance of the 2032 PFAS prohibition, as well as the proposed approach to product grouping. These comments reflect the perspective of a downstream user of PFAS fluoropolymers in high-performance Industrial Automation Monitoring and Control (IAMC) products. Additional context on these products is provided in Appendix A. Below are our comments:

1. *Harmonized Tariff System (HTS) Codes Should be Included as a Formal Method for Grouping Products in CUU Applications. (Question # 8)*

HTS grouping should be recognized as a primary way for organizing products within CUU applications. This approach provides a clear, standardized way to define product scope while allowing applicants to present technical information in a streamlined and consistent manner.

Using four-digit HTS codes as a numeric product identifier offers several key advantages:

- Provides a proven, internationally standardized framework for grouping related products.
- Leverages existing classification systems, thereby reducing administrative burden and compliance costs for applicants.
- Supports alignment with other regulatory jurisdictions and with Minnesota's PRISM reporting system.

This method is particularly valuable because many PFAS-enabled functions are identical across a broad range of products. Requiring separate CUU requests for each product variation would create significant workload, prolong review timelines, and increase the risk of inconsistent determinations for products that share the same PFAS function and justification. Implementing HTS as a grouping approach will standardize CUU applications while still ensuring that the level of detail needed is achieved.

Recommendation: Adopt the four-digit HTS codes as one of the formal methods for organizing product groupings in the final CUU rule.

2. *Multiple Currently Unavoidable Uses (CUUs) Should be Allowed to be Submitted Within a Single Application. Question # 9*

Emerson recommends that the MPCA permit applicants to include multiple CUUs within a single submission when those uses occur within the same product line, manufacturing process, or functional application. For example, Industrial Automation Monitoring & Control (IAMC) equipment, such as pressure, temperature, and humidity sensors, along with process control products like valves, actuators, flow measurement devices, and regulators, may all be deployed within a single chemical manufacturing facility. Because this equipment serves the same operational context, the justification for a CUU would be identical across all fluoropolymer components.

Allowing consolidated submissions will significantly reduce administrative burden for both applicants and MPCA reviewers, while still providing all technical detail necessary for informed decision-making. In contrast, requiring separate CUU submissions for each individual use would significantly increase workload without delivering meaningful environmental or regulatory outcomes. Allowing multiple CUUs per submission ensures that the rule remains protective while enabling efficient, transparent, and technically robust evaluations.

Recommendation: Allow companies to apply for multiple CUUs in a single submission.

3. Delaying CUU Awards to January 1, 2030 Presents Challenges and Uncertainty for: (1) In-State Existing Critical Infrastructure, (2) In-State Manufacturers, and (3) Companies Considering Long-Term Investment Decisions in Minnesota. (Questions 11)

The current timeline gap between the start of PFAS CUU awards (January 1, 2030) and PFAS prohibition (January 1, 2032) is too short, presenting uncertainty for multiple stakeholders, including:

- **In-State Existing Critical Infrastructure:**
 - Fluoropolymers are Commonly Used in Existing Critical Infrastructure: Fluoropolymers are used in applications such as power generation and transmission systems, and transportation systems. Specifically, IAMC equipment such as pressure and temperature transmitters and valves are used in renewable energy applications such as hydrogen production and solar applications. Fluoropolymers are used in these devices to enable safe operation in highly corrosive and demanding environments and to support long-term performance and reliability requirements that few alternative materials can provide.
 - Fluoropolymer-Containing Products Installed Base is High: Existing critical infrastructure was designed, qualified, and certified using fluoropolymer-based components. Ongoing successful operation is dependent on the continued availability of these materials to enable delivery of service parts, replacements, and repair materials to maintain these systems safely and reliably. Without fluoropolymers, the long-term safety, performance, and reliability of critical infrastructure equipment that communities, businesses, and public services rely on every day are at risk.
- **In-State Manufacturers:**
 - Investment Attraction and Retention: The state's ability to attract and retain high-tech manufacturing projects that depend on fluoropolymers for critical equipment and production processes will be significantly diminished. Examples of industries reliant on high-performance fluoropolymers include life sciences, semiconductors, hydrogen production, battery technologies, and wind and solar manufacturing.
 - Operational Uncertainty: Fluoropolymers are essential to many manufacturing processes and product components. In the absence of viable alternatives, manufacturers may be forced to move production out of state in order to ensure the continued availability of IAMC products that support critical-to-the-world applications and to maintain safe, reliable manufacturing operations.
- **Companies Considering Long-Term Investment Decisions in Minnesota:**
 - Long-Term Investment Decisions Require Advanced Planning: In Emerson's experience, long-term capital investments in infrastructure, such as building a new manufacturing facility or repairing and modernizing an existing one, are typically planned well in

advance. These planning cycles often span 5 to 10 years and are influenced by project scale and complexity, regulatory and permitting requirements, and broader market conditions. Critical investment decisions are being made today for projects that will be completed at or near the time of the PFAS prohibition (2032).

Recommendation: Advance the CUU award timeline to January 1, 2028, or at most 12-18 months after the final rule is published.

4. Adjusting the CUU Award Timeline for In-State Companies will Avoid a Single-Window Review Bottleneck. (Question # 11)

Under the current plan, CUU awards will be issued between January 1, 2030 and January 1, 2032 (CUU Validity Start Date) with expiry dates occurring eight (8) years after CUU award issuance. Because the CUU validity period doesn't start until January 1, 2032, early awardees receive a shorter and inequitable CUU validity period, which discourages early submissions. While there is value in receiving advanced notice of a CUU award, it is outweighed by the disadvantage of a shorter validity period.

To promote consistent award durations and avoid application bottlenecks at each phase of the CUU process, the MPCA could adopt an accelerated CUU review timeline for in-state companies, five years is recommended. Establishing a defined "open window", such as 4-6 months, for in-state manufacturers to submit CUU applications would formally recognize their economic contributions to Minnesota. Local companies invest in facilities, workforce development, and supply chains, and a tailored CUU timeline would help sustain and reinforce that commitment.

An accelerated CUU submission pathway would also give in-state manufacturers sufficient time to adjust operational strategies if a CUU request is denied. Overall, this approach recognizes the importance of Minnesota-based manufacturing while providing MPCA with a more staggered and manageable CUU review process.

Recommendation: Provide an advanced "open window" exclusively for in-state manufacturers and issue CUU awards for these companies no later than six to nine months after the final rule is published.

We appreciate the opportunity to provide this information and invite you to reach out for additional information or discussion regarding these comments. We look forward to your response and any potential follow-up.

Contact Details:

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Appendix A

1. Industrial Automation Monitoring & Control (IAMC) Equipment is Indispensable for Delivering Operational Excellence, Innovation, and Positive Sustainability Outcomes.

IAMC equipment consists of complex electromechanical products that measure a variety of parameters such as temperature, humidity, pressure, corrosion and density as well as process control products such as valves, actuators, flow measurement devices and regulators, per the following and Figure 1 (Right):



FIGURE 1. IAMC EQUIPMENT

- Pressure, Flow, Level and Temperature Measurement
- Corrosion, Erosion & Heat Trace Monitoring
- Energy Monitoring & Management
- Industrial Test & Measurement Instruments
- Density & Viscosity Measurement
- Liquid, Flame, & Gas Detection
- Machinery Monitoring, Protection & Maintenance
- Marine Measurement & Analysis
- Distributed Control Systems
- Hygienic & Sanitary Measurement
- Vibration Sensors & Welding Machines
- Electrical Power Distribution & Control
- Valves, Regulators, and Actuators

IAMC equipment is vital for optimizing processes across manufacturing and other industries. It helps boost operational efficiency, enhance safety and reliability, minimize costs and downtime, and fulfill key applications, as outlined below:

- **Enhanced Data-Driven Decision Making for Optimal Operational Efficiency**
 - Real-time parameter monitoring enables proactive adjustments for optimal process control, minimizing manual intervention, ensuring consistency, and maximizing throughput.
 - Real-time monitoring collects critical process data, which can be analyzed to optimize performance, forecast throughput and maintenance, and improve quality control.
- **Safety and Reliability Control**
 - Real-time parameter monitoring identifies and mitigates potential plant failures, reducing risks and unplanned downtime.

- IAMC systems prevent human exposure to hazardous environments, ensuring workplace safety.
- **Scalability Control**
 - IAMC equipment enables operational scale efficiency providing adaptability to changing demands and for allowing the integration of new technologies such as IoT and AI
- **Key Applications Fulfillment**
 - IAMC is critical in sectors like energy, pharmaceuticals, food processing and chemicals.
 - Key enabler of complex activities such as precision manufacturing, sustainable energy control systems, and smart energy grid stability and control.

2. Fluoropolymers are Key Enablers of IAMC Technology

IAMC equipment must be designed with substantial robustness to operate reliably in industrial processes, demanding the use of high-performance materials and high safety margin designs, often specified by industry standards such as ATEX or IECEx.

Fluoropolymers and fluoroelastomers, which are vital as an engineering material class, not because of one particular characteristic, but because of the multiple properties any one of them simultaneously possesses, are perfectly suited for IAMC products. This is demonstrated in Figure 2 below where IAMC requirements and fluoropolymers/fluoroelastomers performance are overlayed. The overlap in performance across this specific array of properties is what sets fluoropolymers/fluoroelastomers apart from other materials and makes them a requirement for many IAMC applications.

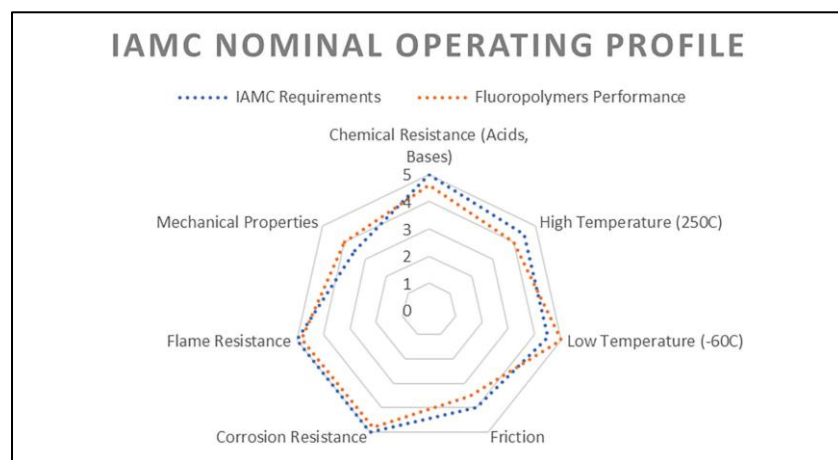


FIGURE 2. IAMC'S OPERATING PROFILE REQUIREMENTS OVERLAP WITH FLUOROPOLYMERS PERFORMANCE

Fluoropolymers' and Fluoroelastomers' most commonly leveraged properties include:

- Broad chemical resistance to virtually all chemicals
- Low temperature performance down to -328°F

- High temperature performance up to 500°F
- Corrosion Resistance
- Intrinsic flame resistance
- Excellent electrical properties
- Low friction
- Purity
- Good oxidative stability

A range of different PFAS (fluoropolymers and fluoroelastomers) such as PTFE, PCTFE, EFTE, PFA, FEP, FKM and FFKM are used in critical components of IAMC equipment, such as liners, coatings, seals, valve packing, valve seats, wire and cable insulation, as well as electronic components.