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**Subject:** Comments on Chapter 90: Products Containing Perfluoroalkyl and Polyfluoroalkyl Substances

Emerson Electric appreciates the opportunity to respond to the Maine Department of Environmental Protection's (DEP's) Chapter 90 rulemaking process, addressing products containing Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS).

We commend the DEP for allowing industry participation in this vital process and recognize the significance and purpose of this rule in protecting both people and the environment. We also acknowledge the importance of responsibly managing and using PFAS materials, particularly in unavoidable cases where their performance and functionality are critical for challenging applications essential to everyday life.

Emerson Electric, headquartered in St. Louis, Missouri, is a global leader in automation with extensive operations across the United States, including over 29,000 employees and 50 manufacturing sites. The company is dedicated to producing Industrial Automation Monitoring & Control (IAMC) products that are safe for both end-users and the environment, aligning with the goals of the DEP. IAMC equipment forms the backbone of modern manufacturing, energy systems, and infrastructure, with PFAS, particularly fluoropolymers and fluoroelastomers, playing a vital role as essential enablers of the technology.

Emerson's primary concern with the Chapter 90 Products draft rule centers on the timing for awarding Currently Unavoidable Uses (CUUs) for the 2032 PFAS prohibition. The proposed rule permits companies to apply for a CUU determination 36 months before the product ban takes effect. Emerson recommends extending this period to 60 months to provide companies with sufficient time to prepare and adapt.

# 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 overlaid. 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.

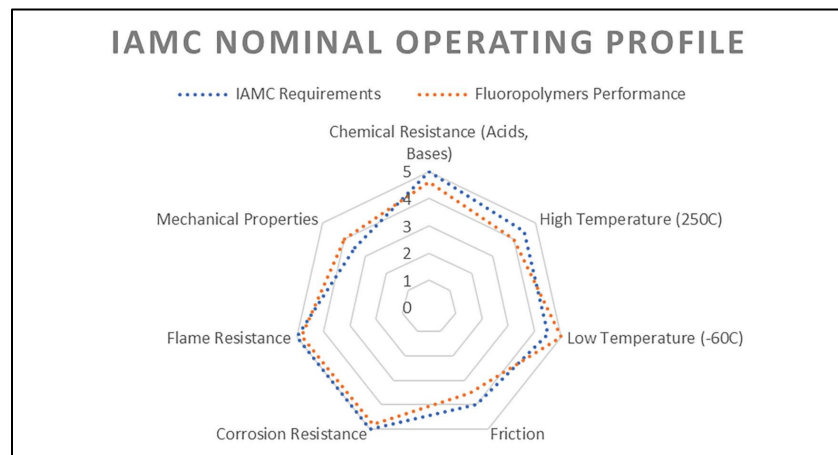


Figure 2. IAMC's Operating Profile Requirements Overlap with Fluoropolymers Performance

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 (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.

### 3. Advanced Planning for Projects Involving IAMC Equipment and PFAS is Necessary.

Policymakers and regulators must consider the critical role of PFAS and the impact of a ban on extended planning timelines, as their availability heavily impacts long-term business investments. The following justification outlines these considerations.

#### Delaying CUU Awards for the 2032 PFAS Prohibition Presents Challenges for Companies Considering Long-Term Investment Decisions

In Emerson's experiences in servicing industrial manufacturing customers and building its own manufacturing facilities, long-term investments in infrastructure, such as building a new manufacturing facility or modernizing an existing one, are typically planned several years in advance, with timelines often ranging from 5 to 10 years. These timelines are influenced by factors such as the scale and complexity of the project, regulatory and permitting approvals, and market conditions. Consequently, businesses are making crucial investment decisions now for future projects in states like Maine.

With a PFAS ban scheduled for 2032 and without accelerated timelines for awarding CUUs, Maine could encounter difficulties attracting high-tech opportunities where PFAS are vital to the manufacturing facilities, particularly in the equipment and machinery used in production in key sectors like life sciences and sustainable technologies, including hydrogen, batteries, wind, and solar.

We believe without a near-term CUU determination, the 2032 PFAS prohibition will represent a significant challenge for businesses planning long-term investments in states like Maine, particularly in terms of PFAS regulatory implications. The following are some factors we believe based on our experiences companies may consider during their investment decision-making process for manufacturing locations where PFAS is being banned.

- **High Financial Risk:** Investments made in developing and deploying products and technologies that rely on PFAS are at risk of becoming obsolete, resulting in loss of investment and/or diluted revenue.
- **Weakened Competitive Position:** Given the current landscape of available PFAS material substitutes, a prohibition could place companies at a significant competitive disadvantage in product usage where PFAS offers key performance attributes.
- **Uncertainty in the Supply Chain:** The PFAS ban, without the appropriate CUUs, will disrupt supply chains, affecting the availability of critical materials needed for manufacturing processes. This uncertainty makes it difficult to plan investments in new products and technologies that rely on PFAS.

#### PFAS Materials are an Important Factor in Long-Term Investment Decisions

PFAS are high-performance materials that drive technological advancements in products, delivering significant financial and societal benefits globally. Renowned for their exceptional

performance, reliability, and role in ensuring safe manufacturing operations, PFAS are critical in many applications.

- **Performance:** PFAS materials provide an unmatched combination of properties to unlock performance attributes in products across the spectrum of industrial applications, including low surface energy, resistance to a wide temperature range, and excellent chemical resistance.
- **Safety and Reliability:** Their ability to thrive in harsh environments makes PFAS essential for meeting demanding operational profiles and for providing reliable solutions which in turn lead to safer environments for workers.

These positive attributes are enabled by PFAS materials, compelling companies to carefully assess their future availability in the regions where investments are being planned.

## **Advancing the Timeline for Awarding PFAS CUUs May Position Maine as a Favorable Destination for Investment**

As stated previously, Emerson recommends advancing the timeline for awarding CUUs for the 2032 PFAS prohibition to 60 months. This new timeline would help create a stable Maine regulatory environment, potentially stimulating economic growth and driving technological innovation.

The benefits of advancing the CUU timeline include:

- **Enhanced Planning Clarity:** Provides companies with greater clarity and confidence in planning their investments.
- **Reduced financial risk:** Protects investments made in developing and deploying products and technologies that depend on PFAS.
- **Optimized resource allocation:** Accelerates the receipt of CUU submissions, informing the Maine PFAS team of the full scope of work.

To minimize disruption with the 2026 prohibition, a function-based approach that categorizes uses by sector could be implemented, with priority and timeline concessions given to CUU awards for industrial products, which typically have the longest lead items.

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