

DOE Per- and polyfluoroalkyl substances (PFAS) Update: National Academies of Science

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AGENDA

- DOE Actions
 - Roadmap
 - Sampling Guidance
 - Storage & Disposal Guidance
- Timeline & Next Steps
- PFAS Resources



DOE PFAS Mission Statement

Protect human health and the environment by assessing and addressing PFAS at DOE sites while deploying the Department's scientific expertise to solve PFAS challenges

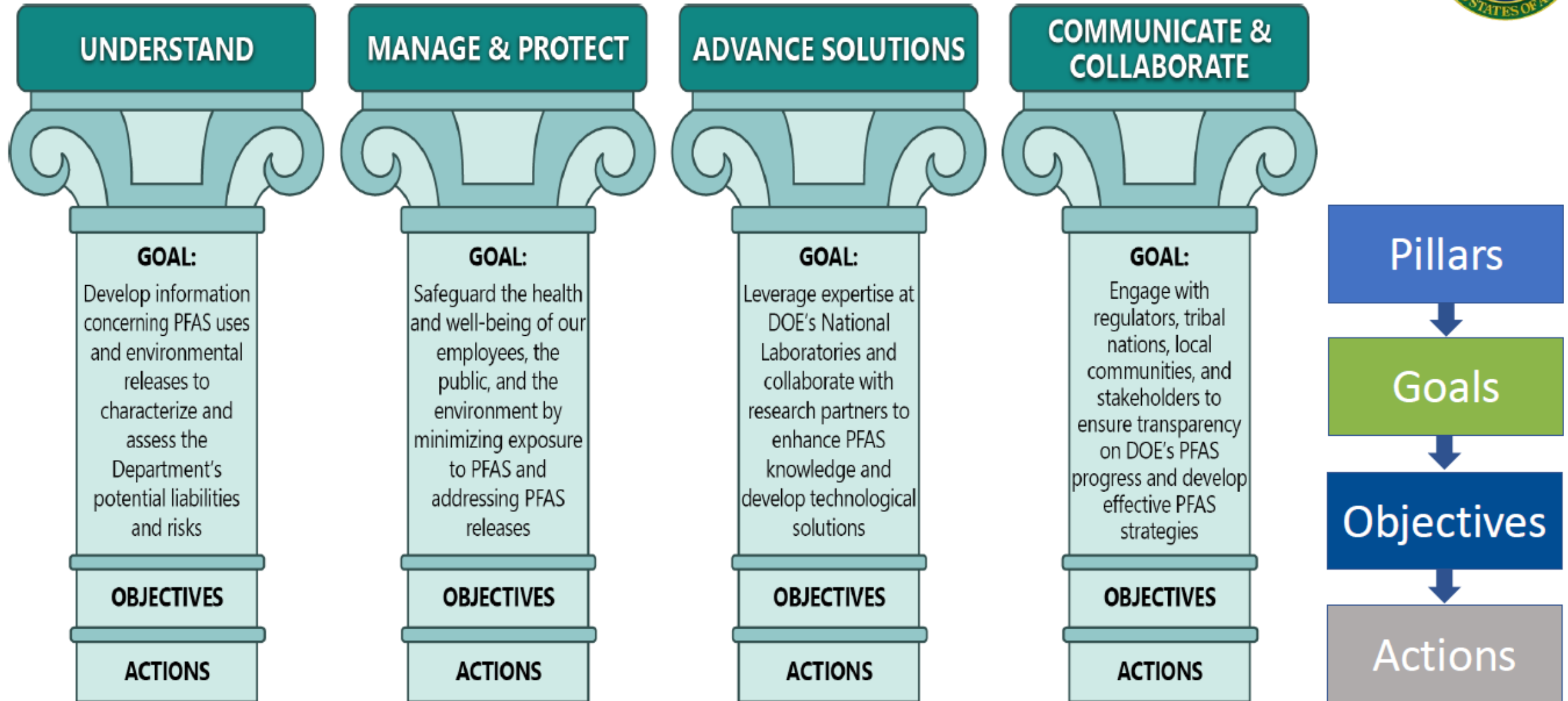
DOE is committed to:

- Coordinating with other agencies and working groups
- Staying informed on activities, updates and challenges related to PFAS contamination and regulation
- Continuing investigations and finding solutions for PFAS contamination at DOE sites

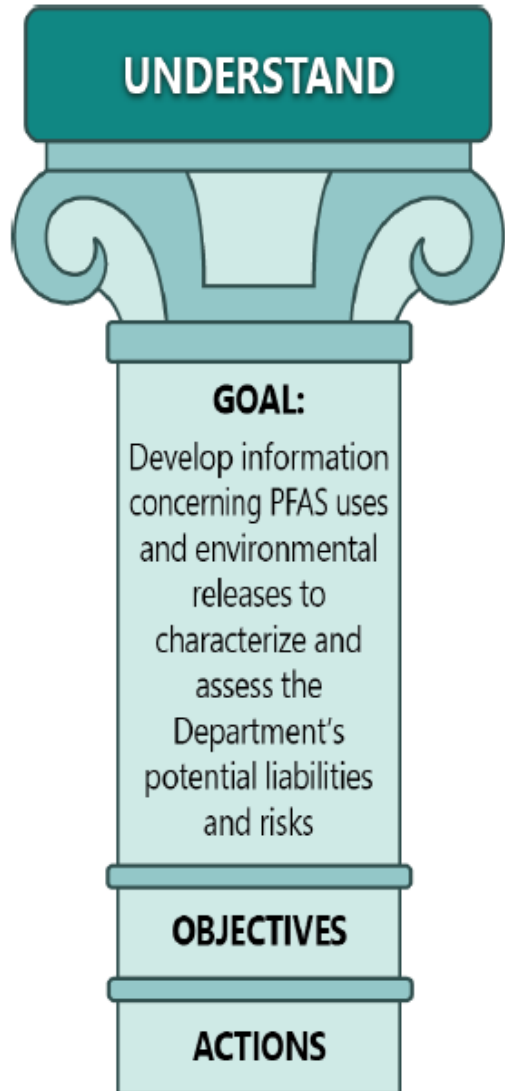




DOE Actions: DOE PFAS Roadmap



Updates on Pillar 1:



PFAS Sampling Guidance (August 2023)

- Presents a framework for investigating PFAS at DOE sites and facilities.
- Describes methods for sampling and analyzing environmental conditions to help identify the nature and extent of contamination, PFAS concentrations in source zones, and the extent and impact of PFAS migration from those zones.

Analytical Capacity: DOE Consolidated Audit Program-Accreditation Program (DOE-CAP)

- Ramping up in anticipation of additional sampling that may be needed to characterize PFAS contamination on sites.
- Collaborating with DOD to advance environmental and analytical laboratory standards, data validation, data quality, and program accreditation opportunities

PFAS Site Assessment Survey

- Annual survey will be sent this fall

DOE Actions: PFAS Environmental Sampling Guidance

The *PFAS Environmental Sampling Guidance* was published on August 3, 2023.



PFAS Environmental Sampling Guidance (ESG)



DOE Actions: PFAS Environmental Sampling Guidance



Goal: Publish environmental sampling guidance to support determining the nature and extent of PFAS releases at DOE sites

- **Purpose:** Outlines a framework for sampling and analyzing PFAS at DOE-owned or -operated entities nationwide.
- **Focus:** Supports determining the nature and extent of PFAS releases and contamination at DOE sites, following the Data Quality Objective (DQO) process to ensure consistency and robustness in site assessments.
- **Process:** Recommends best practices for establishing Data Quality Objectives, selecting appropriate sampling and analysis methods, addressing investigation-derived waste, implementing quality assurance and quality control measures, and incorporating sustainability considerations into site assessments.
- **Engagement:** Encourages early and meaningful communication and collaboration with site regulatory partners, stakeholders, and the public.

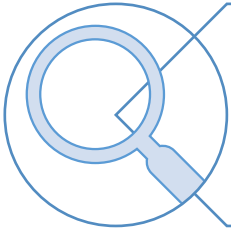


Sampling and Analyzing PFAS at DOE Sites



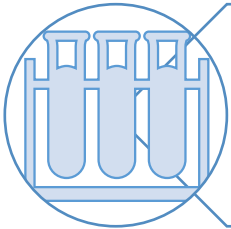
Regulatory Landscape

PFAS regulations are rapidly evolving and vary among states and the federal government.



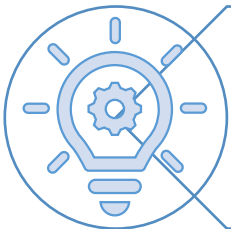
Investigating PFAS

Due to PFAS complexity, investigation strategies need to be dynamic and flexible, tailored to individual sites being studied.



Sampling

Sampling locations are key, can be determined by site conditions, types of PFAS and media to be tested.



Analysis

The guidance discusses laboratory selection and data qualification, quantitative methods, semi-quantitative or qualitative methods, and measurement uncertainty.

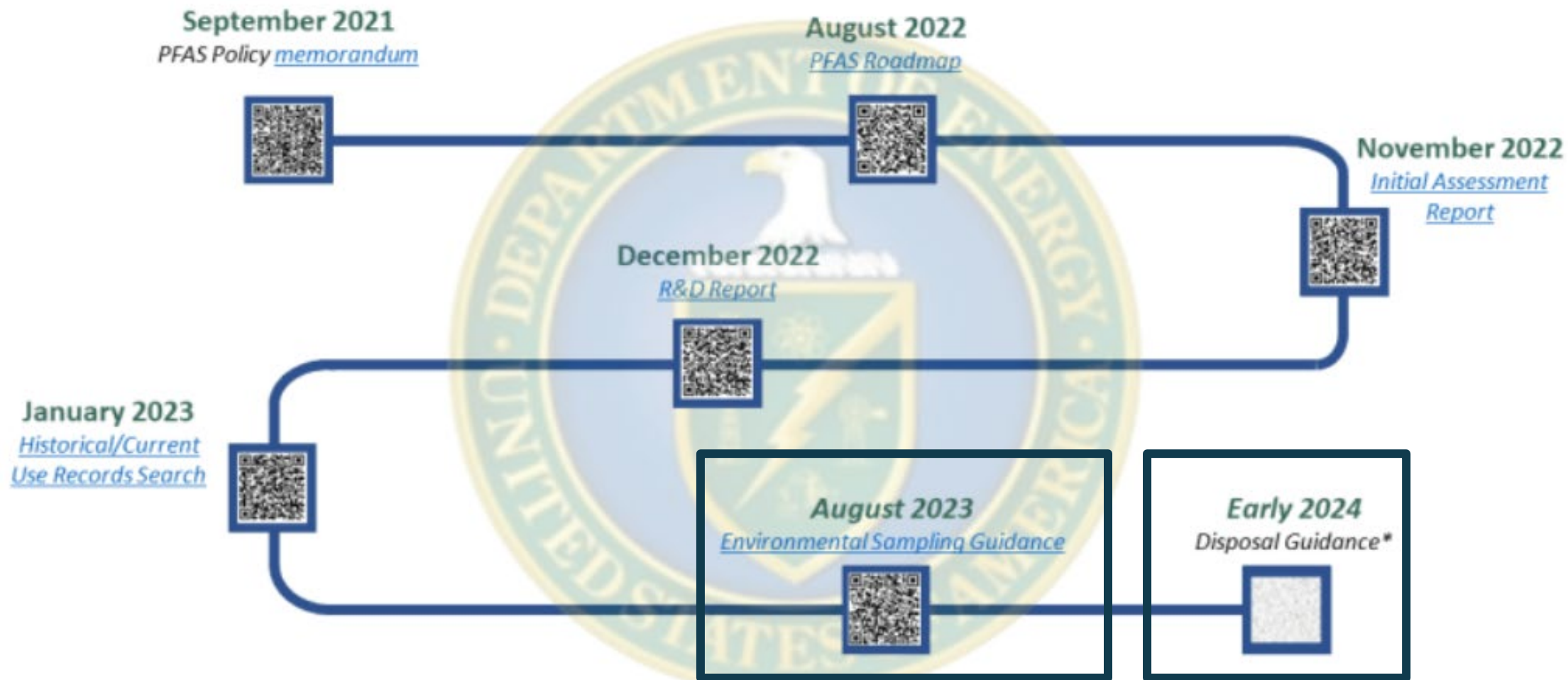


PFAS Action at DOE-EM Sites

- 100% of EM sites that provide potable water have conducted drinking water sampling
- The following sites are currently conducting/plan to conduct groundwater and/or surface water sampling: East Tennessee Technology Park (ETTP), Energy Technology Engineering Center (ETEC), Los Alamos National Laboratory (LANL), Paducah, and Savannah River Site (SRS)
- Many sites have conducted historical and current use PFAS investigation
- Many EM sites continuously engage with local, state, and federal regulators to address PFAS issues



DOE Actions: Timeline

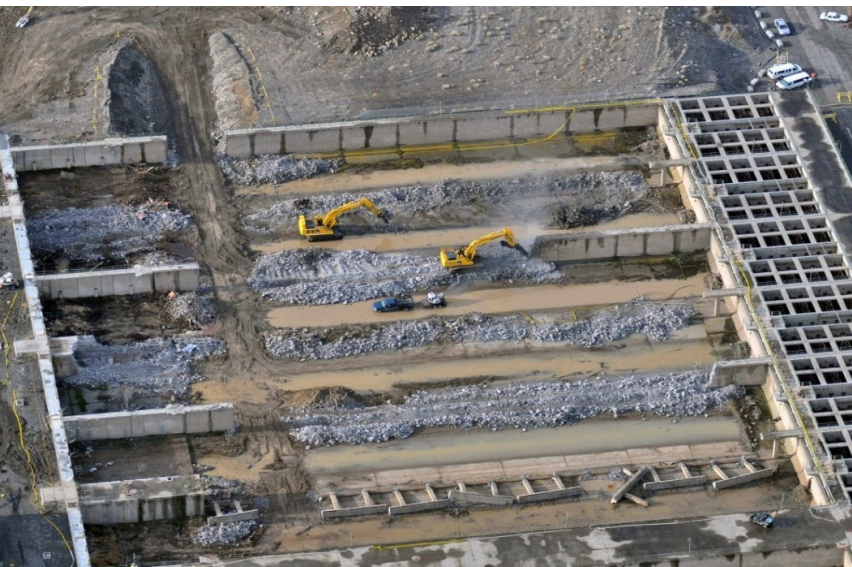


*DOE will complete its *PFAS Storage and Disposal Guidance* following EPA update of its *Interim Guidance on Destroying and Disposing of Certain PFAS and PFAS-Containing Materials*, as EPA recommendations are incorporated into DOE's internal procedures.



Draft DOE PFAS Storage & Disposal Guidance

- Will provide guidance on the Department of Energy (DOE) sites' storage and disposal of materials containing PFAS, whether generated through routine operational processes or from recovery of emergency use discharges or spills of PFAS-containing materials
- Will establish a process for requesting approval for disposal of PFAS-containing waste from the Head of the Departmental Element (HDE)



- Publication pending EPA's finalization of their 2023 Interim PFAS Destruction and Disposal Guidance – Version 2 (expected end of 2023)
- DOE Deputy Secretary policy memorandum: *Addressing Per-and Polyfluoroalkyl Substances at the Department of Energy (S-2 Memo)* placed a hold on a disposal and emphasized storage while allowing for a process of approval – consistent with EPA's 2020 Guidance.
- EPA's Guidance currently provides hierarchy of disposal methods:
 - Permitted deep well injection
 - Permitted hazardous waste landfill (RCRA Subtitle C)
 - Solid waste landfills
- We expect hierarchy to be revisited with potential for consideration of incineration/thermal treatment
- Current WACs do not consider PFAS, updates should be considered

Draft DOE PFAS Storage & Disposal Guidance cont.

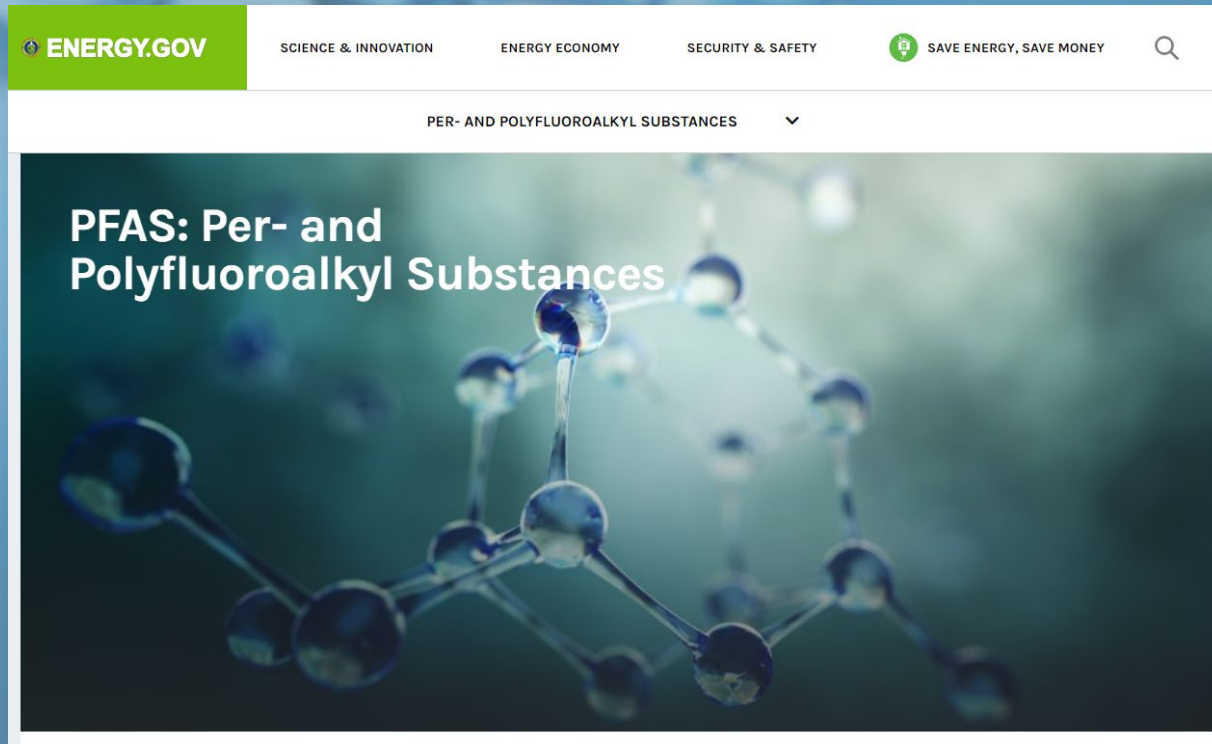
Regulatory Agenda & Impact

EPA Action	Potential Impact	Final Action Anticipated
Addition of Certain PFAS to the Toxics Release Inventory (TRI)	Adding certain PFAS to list of chemicals of special concern, removing de minimis exemption of 100lb and requiring reporting of all quantities of PFAS release through waste management activities. RCRA Landfills are subject to TRI requirements.	Final as of Oct. 31, 2024
Designating PFOA and PFOS as CERCLA Hazardous Substances	Would require CERCLA facility/site to report on PFOA and PFOS releases that meet or exceed the reportable quantity.	Feb. 2024
Listing of PFOA, PFOS, PFBS, and GenX as Resource Conservation and Recovery Act (RCRA) Hazardous Constituents	Would add 9 PFAS to list of RCRA hazardous constituents. these PFAS would be among the hazardous constituents identified for consideration in RFAs and potentially for further investigation and cleanup through the RCRA corrective action process at RCRA treatment, storage, and disposal facilities. May inform state-level health toxicity standards.	TBD
Interim Guidance* on the Destruction and Disposal of PFAS and Materials Containing PFAS; Version II	Provides information on the current state of science and associated uncertainties for three large-scale capacity technologies, targeted towards managers of PFAS-containing materials/waste who need to identify the most effective means for destroying or disposing of these materials. May inform state regulation on disposal.	EOY 2024

Take Home Message:

DOE is transitioning from a policy generation phase to an implementation phase. We will utilize feedback from the sites guided by EPA and state guidance, input from key stakeholders and our own internal processes and procedures to address PFAS issues at our sites.

PFAS Resources



DOE PFAS Website



DOE PFAS Mailbox:

*Contact us with
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Point of Contact

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