



# The Ohio Nuclear Free Network

<https://onfn.org>

We welcome members wherever you live.

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# Make the connection: Nuclear Weapons and Nuclear Power

*“Without civil nuclear power, there is no military nuclear power, and without military nuclear power, there is no civil nuclear power.”* ~ French President Emmanuel Macron

Funding, technology, education, research, infrastructure, all overlap.

The “peaceful” atom - gives legitimacy to the nuclear industry and transfers infrastructure from DOD to DOE.

**Safety is greatly compromised** to make nuclear power affordable.  
Radioactivity is forever. No such thing as safe radioactivity.



# Who pays? Taxpayers and Ratepayers

Military Nuclear: Taxpayers pay for all, including \$1.2 trillion to upgrade nuclear weapons over the next 30 years, started by Obama and continued through Trump and Biden.

Civilian Nuclear: UCS 2011 Report: *Nuclear Power, Still Not Viable Without Subsidies.*

Subsidized though all aspects of the industry, sometimes greater than the value of the electricity produced.

- **Subsidies to cost of labor and land**; uranium mining, milling and enrichment; cooling water; regulatory oversight; security; decommissioning
- **Insurance limiting liability** under the Price Anderson Act
- **Construction Work in Progress** forces ratepayers to pay before receiving electricity.
- **Market competition favoritism** in electricity competition regulations

Wall Street won't fund it any longer, so the government will.  
This is a sampling of ongoing nuclear power funding.

- **Education:** Young people lack interest in nuclear technology.  
*DOE Awards \$5 Million to Future Nuclear Scientists and Engineers* (2022)  
(one recipient is Ohio State University)
- **Keeping old reactors online:**  
*DOE Extends deadline for \$6 billion Civil Nuclear Credit in Infrastructure Bill* (2022)
- **New reactors, completely subsidized** (so-called small, modular) Bill Gates needs money. *DOE awards TerraPower (WA) and X-energy (MD) \$80 million each* (2020)
- **Waste/Depleted Uranium**  
*DOE Awards \$36 Million to Reduce Waste from Advanced Nuclear Reactors* (2022)

Countering the big lie:  
Nuclear Power produces no carbon ? and  
and ZERO EMISSIONS ?



- 1) **The “Front End” of Nuclear Power:** How a reactor gets its fuel.
  - a) *Uranium: Mining and Milling* (ONFN)
  - b) *Uranium: Enrichment, Nuclear Fuel Fabrication, and More* (ONFN)
  
- 2) **Reactor Construction and Operation** Immense undertaking. Outside electricity is needed. Only the chain reaction = no carbon. Massive water use and discharge.
  - c) *How Nuclear Power Worsens Climate Change* (ONFN)
  
- 3) **The “Back End” of nuclear power:** Forever deadly nuclear waste poses an existential threat. And how much energy will it take to isolate radwaste for millions of years?

# Uranium: Enrichment, Nuclear Fuel Fabrication, and More

Radioactivity is released throughout!

**CONVERSION:** Adding fluorine to uranium to make UF<sub>6</sub>, the gas needed for enrichment.

**ENRICHMENT:** A physical process concentrating the (smaller and lighter) fissionable U-235 isotope.

**(OLDER) Gaseous Diffusion Enrichment:** concentrates U-235 by size, molecules go through filters.

**(CURRENT) Centrifuge Enrichment:** concentrates U-235 by weight, spinning.

**STOP!! Laser Enrichment:** WEAPONS PROLIFERATION RISK!! Small buildings, no heat signature.

**DECONVERSION:** Removing fluorine from waste (DUF<sub>6</sub>). Depleted uranium (DU) is used in shells, tanks.

**DOWNBLENDING:** Getting fuel from dismantling weapons.

**FUEL FABRICATION:** Making uranium pellets, fuel rods, fuel assemblies.

**REPROCESSING AND MOX FUEL:** Getting fuel from high-level waste. Plutonium.

**SHIPPING:** Accident, spills, costs borne by locals.

**CLEANUP OF FRONT-END FACILITIES:** Slow, difficult, expensive, swept under rug.

*Honeywell Conversion, Metropolis, IL*



# The Portsmouth Nuclear Site (PORTS) at Piketon, Ohio

- Enriched uranium for nuclear weapons, 1954 to 2001.
- The site is nearly 4,000 acres. Buildings covered 100 acres under roof.
- Used as much electricity as New York City.
- Built 2 coal plants to supply electricity.
- Brought in high level nuclear waste and ran it through all the process buildings. Site now contaminated by transuranics.

NOW BEING DISMANTLED (costing billions)

*Aerial photo of the  
Portsmouth Nuclear Site*



# Military and civilian overlap is prominent at PORTS.

## 1) New Uranium Enrichment

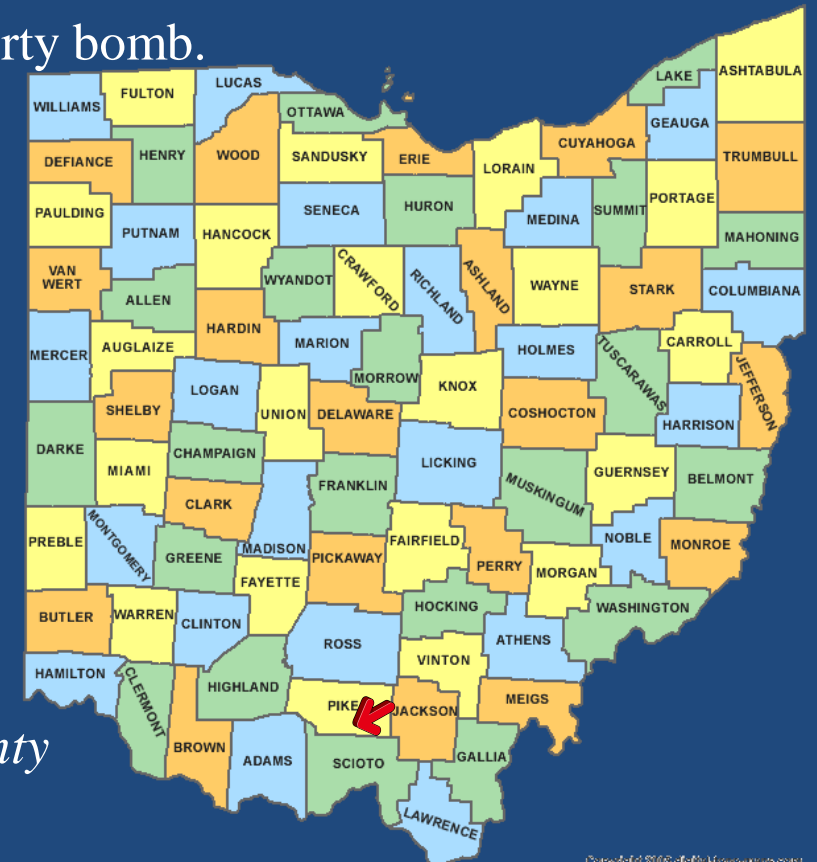
2019: DOE gave a **\$115 million** no-bid contract to Centrus to enrich uranium using centrifuges.

2022: New contract gives Centrus **\$150 million** more.

- ☢ Will make HALEU 19.75 - 25% U-235, could make a dirty bomb.
- ☢ Easily enriched to weapons grade (90+%).
- ☢ U.S. wants to export the technology – proliferation risk!

ONFN Flier: *Ohio, Centrus and the Nuclear Bomb*

ONFN and Beyond Nuclear seek review from NRC on Centrus licensing NRC and Centrus must do the *required* Environmental Impact Statement.



*Arrow on map is Pike County*



# Military and civilian overlap at Portsmouth, continued.

## 2) New Depleted Uranium (DU) process

Using enrichment waste to make DU for military use. Announced by DOE in 2020.

DU is used in munitions, shells and tanks.

Subsidized by skipping the REQUIRED Environmental Impact Statement.

ONFN Flier: [Portsmouth Facility to Convert Depleted Uranium for Warfare](#)

DU from Portsmouth is “dirty” – contaminated with plutonium and other highly radioactive elements – greatly worsening environmental and health impacts.

[Birth defects in Iraq have greatly increased.](#)

[Assessing Depleted Uranium in Iraq.](#)

*Photo: U.N. Environment Programme*



## MORE NEW NUCLEAR subsidies at Portsmouth

- 3) Two New Reactors are proposed at the Portsmouth Nuclear Site. In 2020 DOE awarded a \$5 million grant to support a *potential advanced reactor project*.
- Oklo's sodium-cooled Aurora "fast reactor" nukes would power the Portsmouth Nuclear Site's huge new military hub. Including plans for enriching and fabricating uranium for its own fuel! See Reuters 9-14-23: *Oklo, Centrus eye creation of nuclear fuel hub*.
  - In 2022 the NRC denied Oklo's license application for its Aurora reactor.
  - Fire danger if sodium is exposed to air. NOTE the Fermi 1 partial meltdown in 1955!

See ONFN's website writeup about these Aurora reactors.



Looking for a cut of the 2022 Federal Infrastructure Bill's  
\$9.5 billion hydrogen subsidies.

4) Hydrogen: Proposing the same traditional, filthy process for obtaining hydrogen by removing it from natural gas. Carbon dioxide (CO<sub>2</sub>) is the byproduct.

Making it green by promising the impossible: Carbon Capture.

- \* The biggest uses for hydrogen are in dirty industries that should be phased out – petroleum refining and making artificial fertilizer.
- \* Hydrogen is used at PORTS in the Depleted Uranium facility.
- \* Pipelines would need to be built to supply the natural gas. And to dispose of the CO<sub>2</sub> generated – costing \$\$ only to contain CO<sub>2</sub> for a short time.

# “Cleanup” of Gaseous Diffusion Uranium Enrichment at Portsmouth

The Portsmouth Gaseous Diffusion Plant (PGDP) enriched uranium for bombs and power. High Level Radioactive Waste was run through all the process buildings.

- **MATERIALS WITH TRANSURANICS** are being buried onsite.
- **CRACKED AND PERMEABLE ROCK** lies between the On Site Disposal Facility and the Teays River Aquifer. Critters can chew holes in its rubberized liner.
- **OPEN AIR DEMOLITION**
- **CONTAMINATED WATER** and **GROUNDWATER** are moving offsite.
- **LANDFILLS NOT REMEDIATED** that are outside the perimeter road.

*PHOTO: Improper covering of demolition allows radioactivity to move offsite.*

*Fluor-BWXT Portsmouth is getting bonus money for finishing the job early.*



# Offsite Radioactive Contamination at the Portsmouth Nuclear Site

A DOE 2017 Annual Site Environmental Report – released in 2019 - identified neptunium in an air monitor outside the Zahn's Corner Middle School, 4 miles from PORTS.

Shortly thereafter the Scioto Valley School Board closed the school.

Dr. Michael Ketterer's 2021 analysis identified offsite radioactive elements from PORTS.

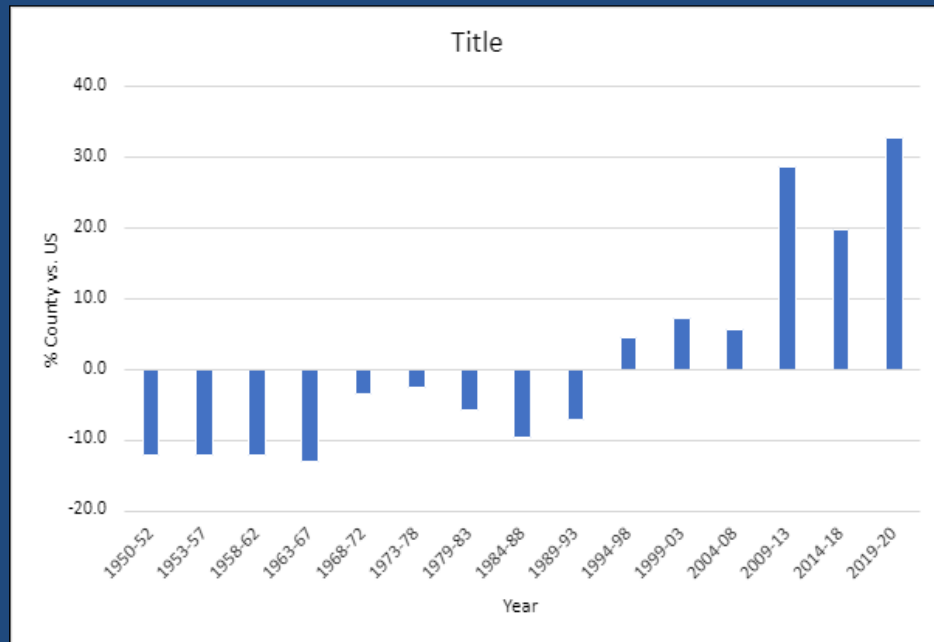
Duane Pohlman, WKRC Cincinnati reporter, has covered health issues and offsite contamination around PORTS in 20 videoclips.

*Photo: The shuttered Zahn's Corner Middle School*



Report: *Health Risk to Local Residents from the Portsmouth Gaseous Diffusion Plant.*  
Report: *Mortality /Morbidity Study, 7 Counties Downwind of the Portsmouth Nuclear Site*  
By Joseph J. Mangano MPH MBA, Executive Director, Radiation and Public Health Project

### Age Adjusted Cancer Mortality, Pike County OH vs. U.S., by 5 Year Period, 1950-2020



The Ohio Nuclear Free Network hired an expert epidemiologist to evaluate cancer and death statistics from the Ohio Department of Health and the U.S. Centers for Disease Control (CDC).

- Pike County cancer mortality went from 12% below the U.S. to 32.8% above.
- The overall Pike County death rate ages 0-74 is nearly double that of the U.S.
- Pike County has the highest cancer rate of all Ohio counties

Ohio is the “heart” of the nuclear weapons industry’s expansion.

Home to one of the nation’s largest nuclear complexes.

PUT YOUR EMAIL IN THE CHAT TO JOIN THE OHIO NUCLEAR FREE NETWORK LISTSERV.

Or contact Pat Marida [patmarida@outlook.com](mailto:patmarida@outlook.com) to join our listserv  
or for questions and/or more information.

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