

Virginia's Innovative Nuclear Hub

(VIN HUB)

Workforce Predictive Needs Analysis

For the Commonwealth of Virginia

June 2026 Update

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VIN HUB Strategic Plan For Driving Economic Growth

Vision:

Virginia will be recognized for its leadership in nuclear in the U.S.

Mission:

Bring together Virginia's nuclear resources into a highly collaborative research team, spanning multiple scientific, engineering, economic, and public policy disciplines, to serve as a world-leading nuclear research, engineering, and technology center, all within Virginia's footprint.

Strategy:

Develop and promote **workforce** development opportunities in nuclear technologies

Facilitate **applied research and technology** deployment

Promote the **benefits** to nuclear technologies

Outcome:

A **growing and sustainable** nuclear workforce

Deployment of **advanced electrical generation** technologies

Increased **awareness and understanding** of the benefits of nuclear technologies



Virginia's VIN Hub Project Activities

Academia / Capabilities

Workforce / Deployment

VA Center for Nuclear Materials and Reliability

VA Workforce Predictive Needs for Nuclear Deployment

VA Research & Education Reactor Facility

Hub Accelerator Program to Support Training and Growth of the Workforce

VA Center for Nuclear Materials and Reliability

The Challenge

Advanced reactors will operate at **higher temperatures** and **use innovative coolants and fuels**—promising greater efficiency and new applications in power, hydrogen, and industrial heat. However, ***these conditions create unique materials-performance challenges*** that must be fully understood to ensure safety, durability, and cost-effective operation.

The Solution: VA-CNMR

The Virginia Center for Nuclear Materials Reliability (VA-CNMR) will ***create a seamless ecosystem that connects education, workforce development, and industry collaboration***. By integrating these elements, it can **open pathways to new research areas**, drive **innovation and technology transfer**, and ultimately consolidate Virginia's position as a national leader in nuclear science and engineering.

Project Status

A draft Nuclear Materials Research Capabilities marketing document was created in support of VA Energy's industry engagement activities. The Project Team is now active in **developing their project report** documenting analyses and recommendations for the proposed next steps to "unite academia, industry, and government into a coordinated, high-impact research and education enterprise" in the Commonwealth of Virginia that will support operational sustainability and resiliency.

VA Research & Education Reactor Facility

The Challenge

Virginia does not have a research reactor facility that would serve the needs of the Virginia Universities and industry. With increasing demand for new nuclear and the use of advanced materials and technologies, **research, education and testing needs that can be served with a test reactor facility will continue.**

The Solution: VA-RERF

Organizing our VA stakeholders around an accessible research reactor facility will serve to **deepen the expertise and capabilities** of the VA universities and help position Virginia as a leader in an innovative research model for the future. This will further serve as an **academic talent attractor for education of students** in the Commonwealth as well as **researchers** who would benefit from the reactor's flexible test capabilities.



Project Status

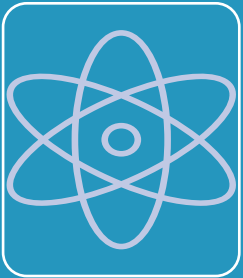
The Project Team is now actively **working to complete final analyses and compile the input for the final roadmap report** and recommendations for the Commonwealth's role in the future of research and education reactors and AI/ML in the development of the next-generation nuclear workforce via a versatile research and education campus.

Workforce Predictive Needs Analysis

Phase 1 Initial Analysis



A review of **existing** workforce **studies** pertaining to the nuclear industry.

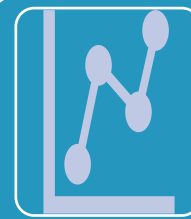


Compares **a projected baseline** demand for **nuclear industry workers** in Virginia to the existing pipeline of completers in associated academic programs.



Relies on **available existing crosswalks** between occupations as defined by the U.S. Bureau of Labor Statistics' Standard Occupation Codes (SOC) and the U.S. Department of Education's Classification of Instructional Programs (CIP) codes.

Phase 2 Expanded Analysis



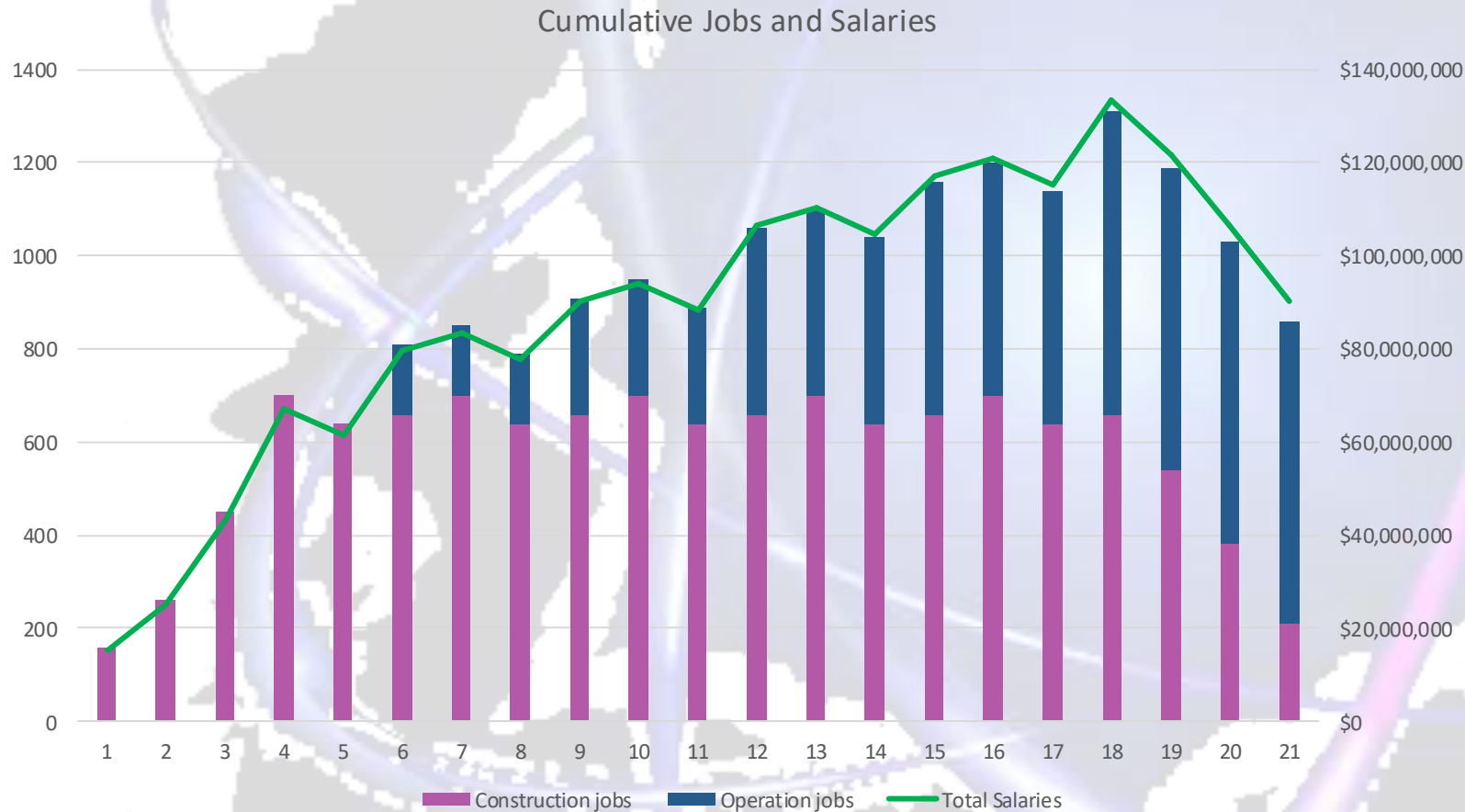
A **review** of the **latest** trends in the nuclear industry nationwide, including, where available, projections of workforce demand.



Interviews with industry leaders to **obtain more specific information** on likely trends within the nuclear industry, inclusive of potential workforce demand for **both LWR and Gen IV** deployments and applicability to Virginia.

Projected Jobs & Salaries – Construction & Operations

Cumulative Annual Jobs and Salaries



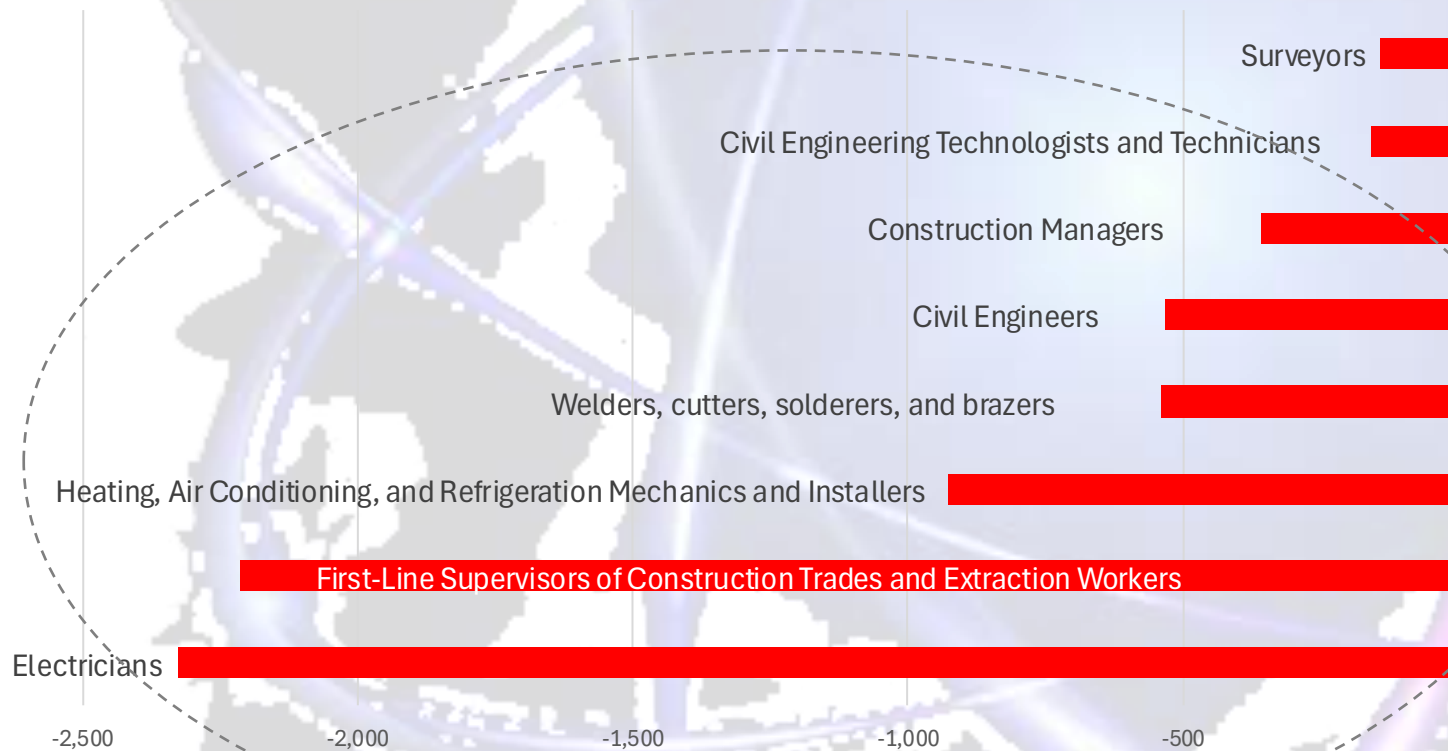
Notes

- Based on a total build of **six (6) new plants***
- Assumes **one (1) new SMR project started every three (3) years**
- **Total annual average salaries peaks at ~\$130M**
 - Average construction salary **\$96K**
 - Average operations salary **\$107.5K**
- ***~1.8–2.1 GW of new capacity**

Note: This analysis is based on multiple inputs; project-specific differences among different SMRs, including construction timelines and labor needs, may vary.

Nuclear Construction Workforce Gaps

Construction Gaps – Post Secondary



Notes

- “**Post-secondary**” refers to jobs that require an **Associates Degree or higher** for entry level
- DOE Liftoff report identifies **skilled construction workforce as the highest constraint** on expanding nuclear energy capacity
- *Assumes projected annual openings are filled with every applicable Virginia graduate*
- Does not differentiate between nuclear skill level and general skill levels needed
- **Total construction-related jobs gap (Virginia + nuclear build) totals ~\$832M in annual salaries.**

Note: The identified gaps reflect roles needed for successful new plants deployment.

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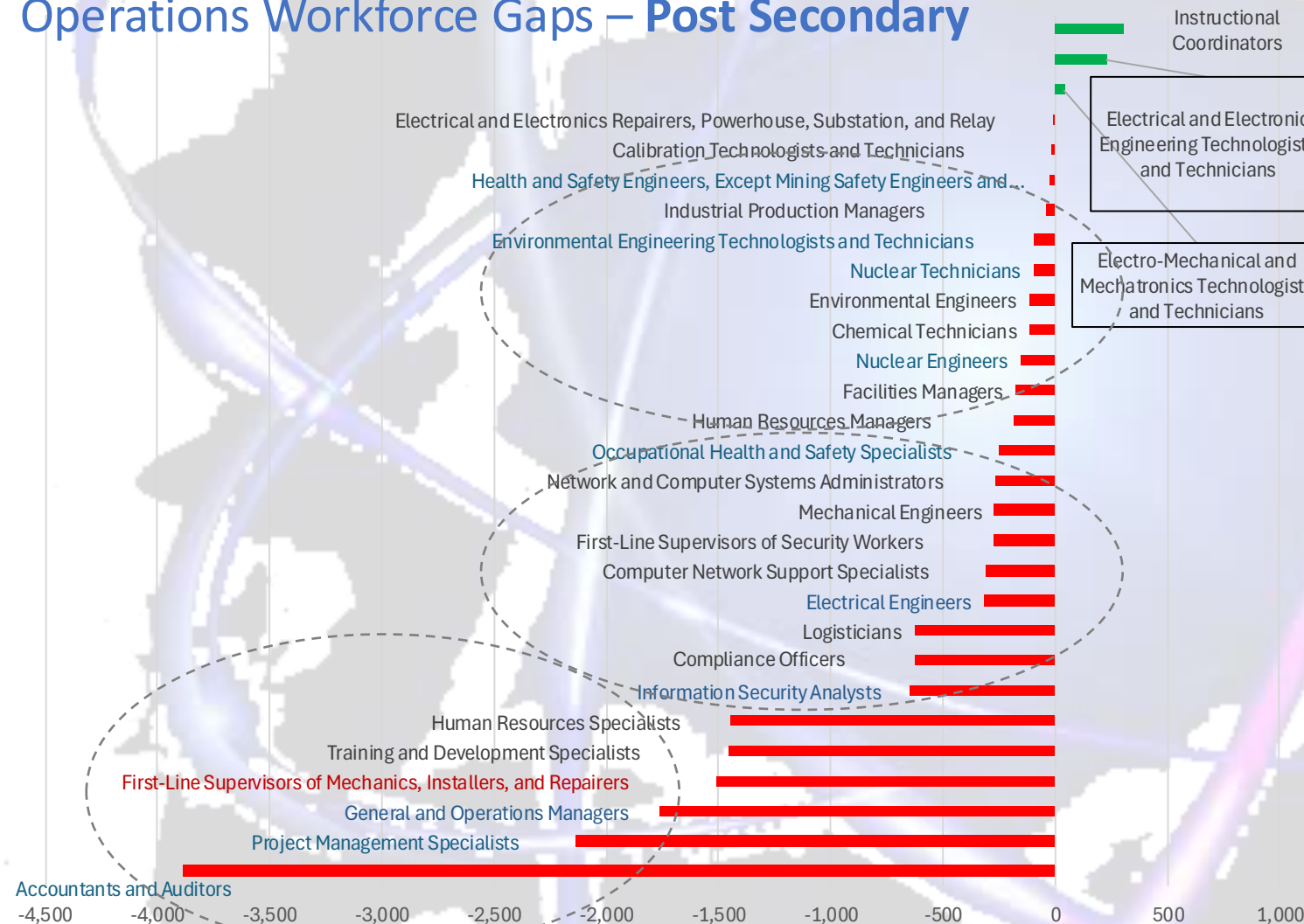
Nuclear Operations Workforce *Gaps*

Operations Workforce Gaps – Post Secondary

Notes

- “**Post-secondary**” refers to jobs that require an **Associates Degree or higher** for entry level
- *Assumes projected annual openings are filled with every applicable Virginia graduate*
- Does not differentiate between nuclear skill level and general skill levels needed
- **Total operations-related jobs gap (Virginia + nuclear build) totals ~\$2.2B in annual salaries**

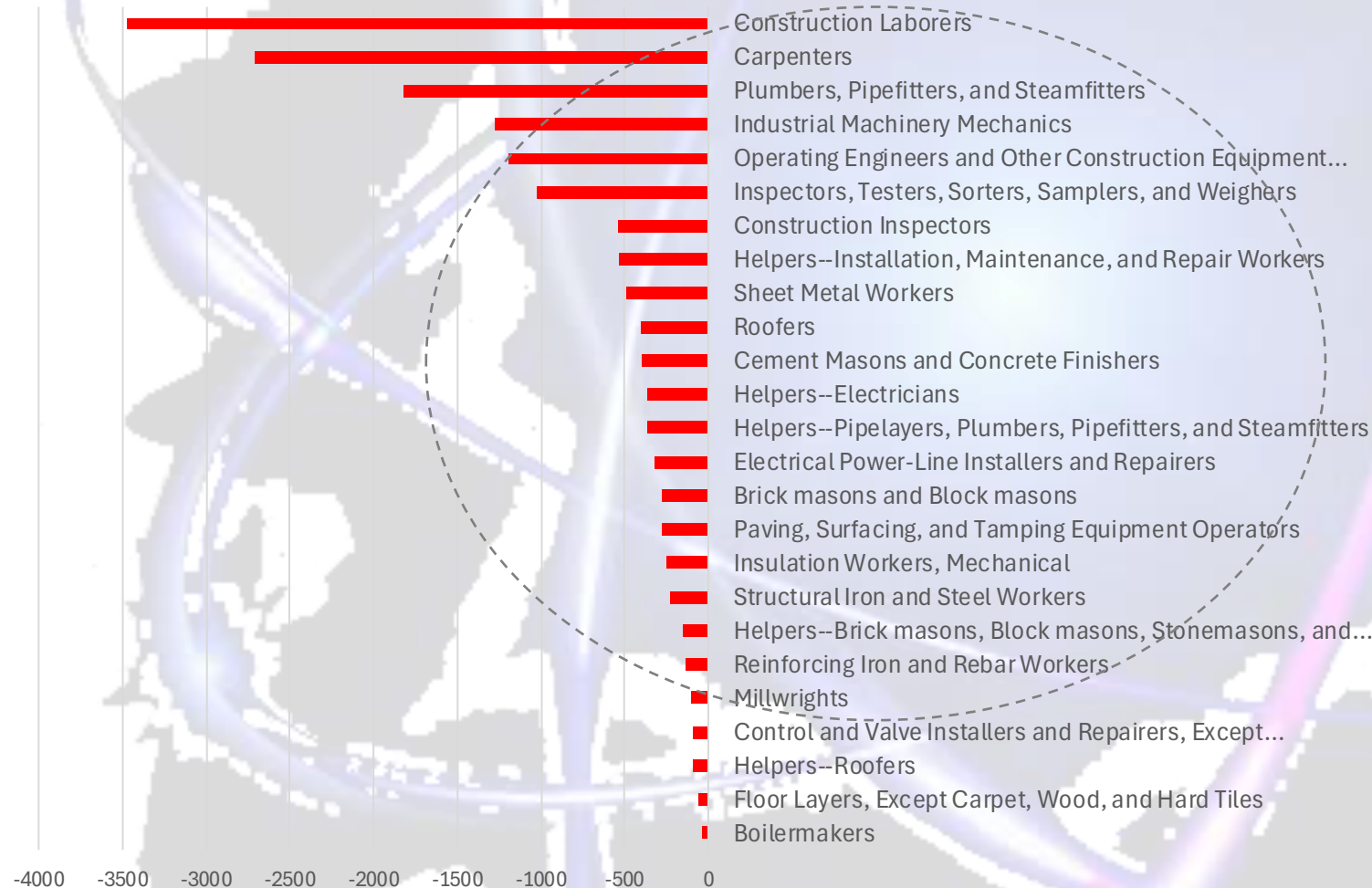
Note: The identified gaps reflect roles needed for successful new plants deployment.



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Virginia's Construction Workforce Demand

Total Virginia Construction Demands – High School Diploma



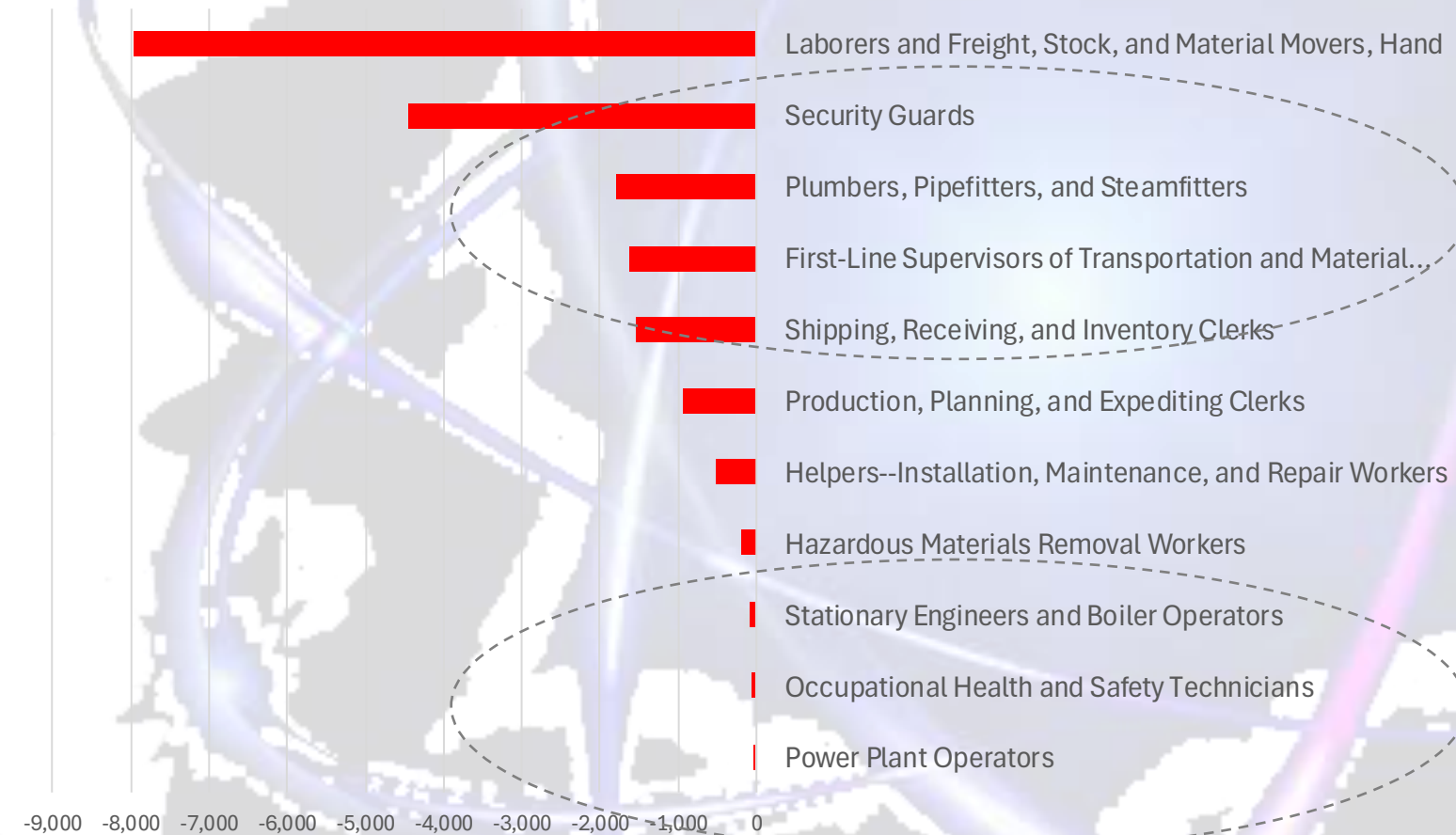
Notes

- DOE Liftoff report identifies **skilled construction workforce as the highest constraint** on expanding nuclear energy capacity
- *Data does not exist on high school graduates with training in technical skills*
- This is total demand for Virginia + additional nuclear build
- **Total annual construction-related jobs needed across Virginia with minimum of a High School Diploma is 16,545 persons**

Note: The identified gaps reflect roles needed for successful new plants deployment.

Nuclear Operations Workforce Demand

Operations Workforce Demand – High School Level



Notes

- *Data does not exist on high school graduates with training in technical skills*
- *This is total Virginia demand for occupations that are also associated with operations of a nuclear build*
- **Total annual operations-related jobs needed across Virginia requiring minimum of a High School Diploma is *19,178 persons***

Note: The identified gaps reflect roles needed for successful new plants deployment.

Questions



LINK to Phase 2 WORKFORCE STUDY

Thank you!

Virginia's nuclear energy future continues here.

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