



PATHWAY TO TRADES SUMMIT



EXECUTIVE SUMMARY AND NEXT STEPS July 2026



Leaders from industry, labor unions, education, economic development organizations and community partners gathered at ORAU recently for the Pathway to Trades Summit to address one of the region's most pressing challenges and greatest opportunities: developing the skilled trades workforce needed to support the rapid expansion of nuclear energy, advanced manufacturing and related industries.

The summit focused on identifying workforce needs, highlighting successful partnerships and programs, addressing barriers to employment, and strengthening coordination across sectors to ensure Tennessee is prepared to meet growing labor demand over the next decade and beyond.

Workforce development is no longer the responsibility of any one institution. Long-term success will require coordinated collaboration among employers, unions, educators, economic development agencies, policymakers and community organizations.

The Pathway to Trades Summit demonstrated strong regional momentum around workforce development for the nuclear sector. East Tennessee has the expertise, partnerships and commitment necessary to help shape the future workforce that will power the nation's next generation of energy innovations.

The next phase is less about creating entirely new programs and more about connecting, scaling, coordinating and sustaining the efforts already underway.

Nuclear workforce demand is accelerating rapidly.

The nuclear industry is entering a period of historic growth driven by administration priorities, expansion of nuclear power capacity, advanced reactor development, infrastructure modernization, national security needs and increased demand for reliable, carbon-free energy. This growth is expected to create significant workforce demand, especially in the skilled trades (e.g., welders, electricians, etc.). The workforce challenge is both immediate and long term.

Tennessee is positioned as a national leader.

Tennessee's existing assets create a strong foundation for leadership in the nuclear workforce space, including ORAU, Oak Ridge National Laboratory, Y-12 National Security Complex, Tennessee Valley Authority, strong union apprenticeship structure, community colleges and universities, and workforce and economic development partnerships. With the help of Rep. Chuck Fleischmann, Gov. Bill Lee and others, Tennessee is poised to serve as a national model for integrated workforce development.

Apprenticeships in skilled trades are critical.

Registered apprenticeships are vital to meet increasing workforce demand for all skilled trade specialties. Apprenticeships provide direct pathways into high-wage careers, and skilled trades should be viewed as premier career opportunities. Employers and educators must continue elevating awareness of skilled trades careers.

Workforce development must begin earlier.

Successful pre-apprenticeship and career awareness programs are two proven ways to begin workforce development for the nuclear industry earlier. The pre-apprenticeship program at Roane County Schools through the East Tennessee Apprenticeship Readiness Program (ETARP) is one example of a program whose

success can be built on. Industry presence at career fairs and educator events is another initiative yielding results. These initiatives expose students to skilled trades careers, technical education pathways, nuclear opportunities, and hands-on learning experiences. We need more programs like this.

Veterans represent a valuable talent pipeline.

Programs like SkillBridge can connect veterans to nuclear careers. Veterans often bring technical experience, leadership skills, strong safety culture awareness, mission-driven work ethic, and security clearance eligibility.

Workforce barriers require community-based solutions.

Non-technical barriers can prevent individuals from entering or remaining in workforce training programs. Challenges include childcare access, transportation, housing availability, training costs, equipment and clothing needs, and financial support during training. Workforce development must include wraparound support services and community partnerships to ensure individuals can successfully participate in training and employment opportunities.

Coordination across sectors is essential.

Strong programs in support of nuclear workforce development exist, but coordination between industry, unions, K-12, higher education, workforce agencies, government, economic development organizations and community groups will be necessary for the region to be successful. The Tennessee Nuclear Network (TN²) is working to strengthen alignment among industry workforce demand, educational curriculum, training capacity, credentialing systems, workforce policy and community resources. Fragmented efforts cannot meet future demand and waste valuable resources.

ASPIRATIONAL GOALS AND ACTIONS

The following action items are offered to Pathway to Trades participants as aspirational, collaborative thought starters designed to spark dialogue, innovation, and shared ownership. They are not prescriptive mandates, but rather a menu of bold

possibilities intended to catalyze partnership across education, industry, labor, community organizations, and government. Each idea is presented in the spirit of co-creation, recognizing that sustainable workforce transformation will require collective

refinement, local insight, and adaptive implementation. We invite you to view these concepts as starting points for conversation, alignment, and coordinated action as we build a stronger, more resilient nuclear trades ecosystem together.

ENHANCING NUCLEAR CAREER AWARENESS

Focus: High-visibility branding and better integration of underutilized resources in the training and on-boarding of skilled trades workers will cultivate multigenerational pride and dismantle stigma related to working in the trades.

SHORT-TERM ACTIONS (1-2 YEARS)

Goal: Reframe trades as national security, high-skill, and economic mobility careers.

Action: Launch a regional marketing campaign explicitly targeting parents and educators to counter the “less-than-college” stigma associated with trade training and careers.

Potential Path Forward: New messaging developed in collaboration with union leadership and funded by economic development organizations would rebrand modern advanced nuclear trades as elite, high-skilled, tech-driven careers. Messaging should emphasize the following value propositions. First, skilled trades workers earn high wages with no student debt. Second, skilled trades workers are critical to driving U.S. energy independence and advanced reactor dominance.

Goal: Create high-energy “Senior Signing Days” for students who elect to attend trade schools or have selected pre-apprenticeships/apprenticeships as the next step in their education as a means of increasing the visibility and stature of skilled trades programs.

Action: Institutionalize “Senior Signing Day” events like those produced for student athletes committing to their school of choice across all Tennessee school districts. These events should include invitations to local media, union and trade school leadership, school officials and parents.

Potential Path Forward: School systems have already created the prototype for events like this by hosting “signing day” events for student athletes. Working together, schools can provide the platform and community visibility, unions can execute immediate registered apprenticeship contracts, and industry

partners can supply signing bonuses and initial professional tool vouchers. “Student Signing Day” events will create the same prestige and community celebration traditionally reserved for university or athletic commitments.

Goal: Institute human-centric recruiting and onboarding processes that give future workers the opportunity to interview at times that work for their schedule.

Action: Traditional interview windows can be inflexible for people who are working, are attending training, have multiple jobs, need to schedule childcare, or need assistance with transportation. Offering ultra-flexible, human-centric recruiting windows across the ecosystem will provide future workers with opportunities to interview at times that work best for their schedules and real lives.

Potential Path Forward: Rigid midday interviewing and testing blocks should be eliminated in favor of evening, weekend and more informal lunch/dinner interview times. Community support organizations or interviewing organizations can help facilitate flexible interview and testing schedules by coordinating temporary childcare and transportation for applicants, which would remove immediate life hurdles for these future workers.

LONG-TERM ACTIONS (3-5+ YEARS)

Goal: Integrate K-12 maker spaces into schools across the state.

Action: Construct, fund and staff permanent fabrication and mechanical troubleshooting maker spaces inside primary schools, middle schools and high schools, where these resources are lacking.

Potential Path Forward: Construct, fund and staff permanent fabrication and mechanical troubleshooting maker spaces inside primary schools, middle schools and high schools, where these resources are lacking.

Goal: Assist veterans with the transition to nuclear energy careers.

Action: As members of the military transition to civilian life, nuclear energy stakeholders should standardize an automated, nationwide recruitment

process that eases the transition to well-paying, highly skilled post-military careers.

Potential Path Forward: To achieve this goal, state governments would finance relocation stipends and accelerate cross-state credential recognition, while industry and trade unions market the nuclear expansion to veterans as a literal continuation of their mission-driven service—capturing highly disciplined talent naturally suited for rigid nuclear safety cultures.



SUPPORTING PIPELINE AND PATHWAY DEVELOPMENT

Focus: Transition from fragmented job sites to unified regional labor exchanges while engineering flexible, whole-person career lattices.

SHORT-TERM ACTIONS (1-2 YEARS)

Goal: Create a framework for a legal youth apprenticeship program beginning at age 16.

Action: Overhaul standard high school work-based learning by establishing a fully legal, structurally insured youth apprenticeship track for 16- and 17-year-olds.

Potential Path Forward: To achieve this goal, public schools would manage academic scheduling, the state labor department would create regulatory safety carve-outs, and unions would place students directly into paid, non-hazardous fabrication, pre-assembly, and logistics environments to accelerate post-graduation trade status.

Goal: Develop pre-apprenticeship exam bootcamps.

Action: Co-design and launch intensive academic remediation bootcamps explicitly engineered to break down math and reading readiness barriers.

Potential Path Forward: Working with unions and the Tennessee Board of Regents, community colleges and TCATs would provide remedial instructors and testing spaces, while trade unions would align the coursework directly to pass their competitive apprenticeship entrance exams on the first attempt, preventing local candidates from dropping out at the application phase.

Goal: Expand the idea of the nuclear fast-track force multiplier.

Action: Including the Roane State Community College 15-hour introductory nuclear module as an integrated component of every standard skilled trade education program at other Tennessee community colleges and Tennessee College of Applied Technology locations would immediately expand the existing talent pool.

Potential Path Forward: To scale this program, educational institutions would need to staff with trained instructors, industry partners would actively contribute both time and equipment as well as audit the introductory nuclear module on a regular basis, provide guest lectures on plant expectations, and guarantee priority hiring interviews for any student graduating with this embedded badge.



LONG-TERM ACTIONS (3-5+ YEARS)

Goal: Develop a cross-industry labor clearinghouse.

Action: Establish a centralized regional labor optimization exchange to dismantle traditional corporate and site boundaries and accelerate the recruiting and onboarding process for new hires in the skilled trades. This would also decrease the potential for labor “poaching” and allow community support and wrap-around services to better plan.

Potential Path Forward: Through a shared digital clearinghouse, major employers and trade unions would map their construction, outage and maintenance schedules well in advance, setting the stage for needs analysis, development of strategies to meet those needs, and keeping the skilled labor pool at the ready. The construction and operations timelines would be more transparent, allowing for labor resource optimization and lessening the need for recruiting and poaching from other regional companies.

Goal: Develop a statewide academic-trade matrix architecture.

Action: Pass statewide legislation supporting a multi-entry career matrix for skilled trades workers.

Potential Path Forward: To achieve this goal, the statewide matrix must enable a student to start as a pre-apprentice, stack non-credit TCAT modules, transfer those hours directly as college credit toward a community college associate degree, and transition to a four-year institution in an engineering or management track later in life without losing a single credit hour or repeating trade training.

Goal: Develop and implement whole-person apprenticeship programs.

Action: Redesign the traditional trade training model by permanently embedding professional social support and mental health case managers inside union halls and TCATs.

Potential Path Forward: To achieve this goal, community organizations would provide trained navigators/mentors to handle life crises (housing, family stability, wellness), while unions and schools adjust curriculum structures to allow flexible learning paces, dramatically improving retention among women, single parents, and adult career-switchers.

IDENTIFYING FINANCIAL SUPPORT AND INSTITUTIONAL PROGRAMS

Focus: Secure financial support while centralizing the student experience through unified digital infrastructure.

SHORT-TERM ACTIONS (1-2 YEARS)

Goal: Develop an integrated nuclear trade student dashboard.

Action: Develop and launch a single, centralized digital student dashboard that serves as a comprehensive guide for aspiring trade professionals.

Potential Path Forward: Leveraging resources such as TN2, the integrated nuclear trade student dashboard would serve as a one-stop-shop for information about all available regional job opportunities, active union apprenticeship openings, and wraparound support services. Crucially, the system should feature an automated, visual tracking ledger showing exactly how a student can stack non-credit certificates and trade licenses and earn community college credits to achieve maximum career mobility.

Goal: Create a benefits cliff financial buffer pilot project.

Action: Design and deploy a temporary cash-stipend buffer program to protect advancing workers.

Potential Path Forward: In this financial buffer pilot project, University of Tennessee researchers and Tennessee Department of Human Services (TDHS) would track the data and map the precise wage thresholds where apprentices face sharp drops in state childcare or housing aid due to salary increases. TDHS would disburse state workforce funds to provide temporary financial offsets, ensuring apprentices can accept step-advancements without facing immediate and negative household impact.

Goal: Create public-private multi-shift childcare networks.

Action: Establish and fund drop-in childcare hubs engineered specifically for non-traditional industrial hours (e.g., 5:00 a.m. drop-offs or night-shift coverage).

Potential Path Forward: To create non-traditional childcare hubs, the State of Tennessee, the U.S. Department of Energy, or nuclear energy industry partners would provide the physical space or real estate near the job site, TDHS would supply the regulatory licensing and state subsidies, and community childcare organizations would manage and staff the facilities. Based on models already in existence, these centers would meet the non-traditional hours need and could serve as models of early childhood learning.

LONG-TERM ACTIONS (3-5+ YEARS)

Goal: Develop an economic multiplier reinvestment infrastructure.

Action: Draft and pass state legislation that captures a dedicated portion of the tax revenues generated by the sevenfold economic ripple effect of nuclear expansion, such as the localized growth in surrounding housing, retail, and hospitality.

Potential Path Forward: To achieve this goal, the State of Tennessee would earmark revenue from the reinvestment infrastructure for a self-sustaining Tennessee Skilled Trades Training Fund or other aligned infrastructure to permanently insulate educational tracks from shifting economic and political winds.

Goal: Create a permanent wraparound services endowment fund.

Action: Mandate that a micro-percentage of every long-term utility power purchase agreement or advanced reactor build in the state be funneled into a locked, non-profit emergency fund to meet the wraparound service needs of existing and future workers.

Potential Path Forward: The wraparound services endowment fund would be managed by community trust organizations and oversight boards. Fund managers would issue rapid-response capital to apprentices and students facing sudden life barriers (emergency transportation failures, temporary housing displacement or medical gaps). The hope is this endowment fund would permanently reduce student attrition.

Goal: Create and implement regional housing development alliances.

Action: Establish dedicated, high-density affordable housing overlay zones adjacent to primary nuclear construction and manufacturing corridors that will enable workers to live near their workplace and reduce potential barriers related to housing, transportation and childcare.

Potential Path Forward: These regional housing development alliances would work with economic development groups to coordinate the private capital, work with local municipalities to issue specialized housing bonds and speed up permitting, and work with major industry players to provide long-term master leases to guarantee that incoming entry-level apprentices and technicians are not priced out of the communities they power.

OPTIMIZING ACADEMIC AND TRAINING RESOURCES

Focus: Building a synchronized, rapid-response training grid fueled by cross-sector shared instructional talent.

SHORT-TERM ACTIONS (1-2 YEARS)

Goal: Develop and implement a synchronized training ecosystem and shared faculty model.

Action: Establish an instructor-sharing framework that legally and structurally permits elite engineers and master trade craftsmen from industry and unions to teach credit-bearing classes at high school (dual enrollment), TCATs and community colleges on a flexible schedule.

Potential Path Forward: To achieve this goal, employers and unions would preserve the professionals' corporate benefits and seniority while educational institutions wave rigid academic credentialing hurdles in favor of validated field expertise. This model would instantly solve the severe technical instructor shortage.

Goal: Create rapid-response curriculum co-design and review panels.

Action: Form an advisory, rapid-response curriculum review board that meets every six months to dismantle and rewrite training modules based on immediate field deficiencies and changing labor forecasts.

Potential Path Forward: The purpose of the review panels is to inject real-world data straight into the technical labs, ensuring that classroom blueprints evolve at the speed of active advanced reactor commercialization.

Goal: Create a cross-sector shared demand forecasting council to oversee a dynamic workforce planning tool.

Action: Form an advisory, quarterly workforce council where competitive energy employers disclose their five-year labor and craft demands at an actionable level. Develop a dynamic regional workforce planning tool, accessible to all players, including supply, infrastructure development, and community and wrap-around services.

Potential Path Forward: A shared demand forecasting council would be beneficial to all stakeholders: trade unions and community colleges are on the receiving end of this data and would use it to adjust enrollment caps, scale instructor hiring, and strategically reduce talent poaching from competing regional mega-projects like commercial data centers.

LONG-TERM ACTIONS (3-5+ YEARS)

Goal: Create the National Nuclear Trades Academy.

Action: Capitalizing on Tennessee's bid for the DOE Nuclear Lifecycle Innovation Campus (NLIC), integrate master union craftsmen, support services and other entities normally not considered in these types of efforts to ensure that all available resources are being used to their full potential and that all future nuclear workers can access the programs.

Potential Path Forward: Whether under the DOE NLIC or in parallel, encourage the state and industry partners to focus on innovative options to support this on-going work.

Goal: Develop contextualized trade mathematics curriculum synchronization.

Action: Systematically rewrite general education requirements across the state technical college system. Academic faculty and union training directors co-author curriculum where standard mathematics, geometry and literacy concepts are taught entirely within real-world technical frameworks (e.g., teaching advanced trigonometry through the prism of nuclear pipefitting layouts or component fabrication).

Potential Path Forward: The Tennessee Board of Regents would need to support the re-writing of requirements and curriculum. Tennessee-based community colleges would pilot the new curriculum, focusing on the needs of the students and trainees for relevant learning.

Goal: Build co-located advanced technology labs.

Action: Stop building duplicative training facilities. In this action, SMR developers and fuel supply chain companies would donate state-of-the-art simulation and diagnostic machinery. These would then be physically installed directly within existing high schools, Union Training Centers, Community Colleges, and TCAT buildings, where access is optimized. This optimizes public-private capital and ensures students train on the exact hardware used in the field.

Potential Path Forward: Private industry partners with existing educational entities would launch pilot projects focused on where there are gaps and where resources are most needed.



PATHWAY TO TRADES SUMMIT OVERALL THEMES

Collaboration Over Competition. Organizations throughout the region are increasingly working together to solve shared workforce challenges.

Workforce Development Is Economic Development. Preparing workers for high-demand careers strengthens communities, supports economic growth, and improves long-term regional competitiveness.

The Workforce Ecosystem Must Be Inclusive. Success will depend on creating pathways for students, veterans, adult learners, career changers, and underserved populations.

Urgency and Opportunity Coexist. The workforce challenge is significant, but so is the opportunity for Tennessee to lead nationally in nuclear workforce innovation.

