UNITED BROTHERHOOD OF CARPENTERS AND JOINERS OF AMERICA

Douglas J. McCarron
General President

February 22, 2024

Via https://www.regulations.gov

Office of the Chief Counsel (Passthroughs and Special Industries)
Internal Revenue Service
Washington, D.C. 20044

Re: IRS Reg. 117631-23

Dear Sir or Madam:

The United Brotherhood of Carpenters and Joiners ("UBC") respectfully submits the following comments to the Treasury Department's proposed rule regarding Section 45V Credit for Production of Clean Hydrogen, 88 Fed. Reg. 89220 (Dec. 26, 2023) ("Proposed Rule"). With a half-million members primarily in the construction industry, the UBC is North America's largest building-trades union.

The Proposed Rule would implement the Inflation Reduction Act's clean hydrogen production tax credit under Internal Revenue Code Section 45V. Our comments are directed to helping to ensure President Biden's pledge is fulfilled that "we have a once-in-a-generation economic opportunity to create and sustain jobs, including well-paying union jobs" in responding to the climate crisis. *See* Executive Order 14057 (Dec. 8, 2021). Stimulating the creation of a new hydrogen economy is critical to achieving the Administration's goal of net-zero emissions by 2050. A robust hydrogen economy has the potential to support 700,000 jobs by 2030, growing to 3.4 million jobs by 2050.[1]

The nation's nuclear fleet can play an essential role in jump starting the hydrogen economy and realizing the job benefits of smart decarbonization policies. Good-paying, highly skilled union jobs will be created if existing nuclear facility owners and operators are able to construct electrolyzers and retro-fit their existing plants to produce hydrogen. By contrast, the Proposed Rule would preclude the owners and operators of existing nuclear power facilities from putting UBC members to work doing construction and retrofits at their plants to produce hydrogen. We submit these comments because the Proposed Rule must be modified substantially if it is to further the President's goal to utilize the new green economy to raise up the middle class and union jobs.

More specifically, while existing nuclear facilities produce no greenhouse gas emissions in generating power to electrolyze water to produce clean hydrogen, the Proposed Rule provides no clear path forward for these facilities to participate in the Section 45V program. The Proposed

[1] Road Map to a US Hydrogen Economy: Reducing Emissions and Driving Growth Across the Nation, available at ushydrogenstudy.com.

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Rule is focused on concerns that using power from existing sources of electrical generation, including existing nuclear facilities, could contribute to the creation of induced greenhouse gas emissions. However, this assumes that the nation's nuclear fleet will continue operating in perpetuity even without access to policy support, such as participating in the 45V program. A wave of nuclear retirements in the past combined with expiration of the nuclear production tax credit in the future demonstrate that this assumption is faulty. The Proposed Rule acknowledges that reality by seeking comment on how existing nuclear facilities can participate in the IRA Section 45V program. As explained below, solutions are at hand.

Real jobs depend on this rulemaking's outcome. Today, our members (carpenters, millwrights and pile drivers) are primarily involved in the repair and remodeling of existing nuclear facilities. Working at a nuclear plant requires special skills and training for apprentices and journeyworkers alike that is conducted pursuant to a long-standing agreement between the building trades unions and nuclear power plant owners and operators. Prohibiting nuclear plants from participating in the Section 45V programs signals that the country does not value the continued operation of these plants and the jobs they support. Over half of the country's nuclear fleet operates in competitive markets, relying on market revenues to justify continued operation. Many these merchant nuclear plants are nearing the end of their operating licenses and need years of regulatory and capital investments in order to extend their lives for another 20 years. The relicensing of the merchant nuclear fleet alone will create over 900 million person-hours of work for power plant workers – 450,000 person-years of high-paying, family-supporting jobs that are threatened by a lack of policy supporting continued operation.

Significantly, more and different high-quality jobs will be created not only for carpenters, but for members of all the building and construction trades, in the construction of electrolyzers and retrofit of existing nuclear facilities to produce clean hydrogen, as well as the upgrades to these plants attendant to the relicensing needed to participate in the hydrogen program over the long run. For instance, our members helped construct the first nuclear-powered hydrogen electrolyzer in the United States at Constellation Energy's Nine Mile Point Energy Center in Oswego, New York. This work was funded under a pilot program the 2021 Infrastructure Investment and Jobs Act (IIJA) created. This project at the Nine Mile plant, involving installation of a small modular electrolyzer, created new jobs for carpenters and members of other trades.

Projects to construct utility scale electrolyzers powered by nuclear energy are in the planning phase and are included in plans for hydrogen hubs awarded by the Energy Department. Indeed, existing nuclear facilities participate in three (of seven total) separate IIJA-funded hydrogen hubs the Energy Department has selected for award. The number of jobs, and array of skills, needed to construct these full-scale electrolyzers dwarfs what was needed at the Nine Mile demonstration project and is an order of magnitude different from what is needed simply to repair and remodel existing facilities. This is precisely what Executive Order 14057 envisions, but these "pink hydrogen" hubs plans are in jeopardy unless the Proposed Rule extends production tax credits to hydrogen production at existing nuclear power plants.

Furthermore, unless the Proposed Rule is modified, it will create a fundamental disconnect between the IRA's Section 45V program and both the IIJA and the U.S. National Clean Hydrogen

Strategy and Roadmap[2] ("Hydrogen Roadmap") developed by DOE pursuant to the IIJA. In fact, both the IIJA's clean hydrogen program and the Hydrogen Roadmap are premised on existing nuclear plants being able to participate in national efforts to produce clean hydrogen. It is simply inconsistent for the Nation's clean hydrogen plans to include using existing nuclear facilities to produce hydrogen while the Tax Code is implemented in a manner that precludes these very same energy producers from obtaining the production tax credit that is designed to make development of hydrogen production infrastructure financially feasible.

For its part, the IIJA provides for an "all-of-the-above" approach to clean hydrogen production capacity development, stating that "[t]he national clean hydrogen strategy and roadmap … shall focus on .. clean hydrogen production and use from natural gas, coal, renewable energy sources, nuclear energy and biomass …." The IIJA also requires the Administration to "focus on … identifying … economic opportunities for the production, processing, transport, storage, and use of clean hydrogen that exist for merchant nuclear power plants operating in deregulated markets."

The Hydrogen Roadmap reaffirms that "Hydrogen is … seen as an ***enabling*** technology—enabling renewables through long-duration energy storage and offering flexibility and multiple revenue streams to clean power generation such as today's nuclear fleet as well as advanced nuclear and other innovative technologies." (at 6) Over the long term, the goal is "boosting the efficiency of electrolysis, reducing electrolyzer and balance-of-plant capital costs and enabling dynamic integration of electrolyzers with the grid and with renewable and nuclear generators to access low-cost variable power." (at 41)

The 45V Rule needs to support the Hydrogen Roadmap, not impede it. That roadmap provides that nuclear power be integrated into the hydrogen program, starting now. Key program targets for 2022-2023 include 1.25 MW of electrolyzers integrated with nuclear for H_2 production, while these targets for 2024-2028 include 10 or more demos with renewables (including offshore wind), nuclear, and waste/fossil with CCS and 20 MW of nuclear heat extraction, distribution and control for electrolysis. (at 57) And, under the roadmap, actions to support clean, affordable, and sustainable hydrogen production for 2022-2025 include demonstrating clean hydrogen production from multiple pathways, including pyrolysis, waste, renewables and nuclear, and by 2026-2029, deploying clean hydrogen from renewables, nuclear, fossil + CCS at scale. (at 69) With modular nuclear reactors in the design phase, and the development arc for a new full-scale nuclear facility measuring at least a decade, the Hydrogen Roadmap's goals can only be met using today's nuclear fleet.

Nor, moreover, does the Proposed Rule's overly strict additionality requirement recognize the on-going competition for clean electricity. As DOE's *Pathways to Commercial Liftoff – Clean Hydrogen* explains, "accelerating demand for clean electricity is a challenge across many clean energy technologies as new electricity demand (e.g., for electrolysis, direct air capture) develops in parallel to electrification of buildings and transport. By 2030, up to 200 GW of additional renewables would be needed to power clean hydrogen via water electrolysis, although this value could be decreased if nuclear-powered electrolysis becomes more widely available." (at 59) It is

[2] Available at https://www.hydrogen.energy.gov/docs/hydrogenprogramlibraries/pdfs/us-national-clean-hydrogen-strategy-roadmap.pdf.

just not practical to expect that our Nation will be able to meet aggressive state and federal renewable power goals while also creating another 200 GW of renewables for clean hydrogen. As but one example, if the Administration's goals for offshore wind power are met, this gargantuan undertaking (which the UBC is committed to help achieve) would provide "only" 30 GW of renewable energy by 2030. Existing power generators, including nuclear facilities, will need to be enlisted to meet hydrogen goals, especially if other renewable energy goals are to be met.

The Hydrogen Roadmap also requires that clean hydrogen be produced affordably. Section 40314 of the IIJA (enacting EPAct section 816) sets a target of $2 per kilogram for electrolytic hydrogen by 2026, which DOE incorporates into its 2030 goal of $1 per kilogram for clean hydrogen. Hydrogen produced at existing nuclear facilities is best able to achieve this price point. A report by the Organization for Economic Cooperation and Development-Nuclear Energy Agency, entitled *The Role of Nuclear Power in the Hydrogen Economy: Cost and Competitiveness*, explained that "The majority of water electrolysis cases yield a hydrogen production cost below or around USD 3.5 per kgH_2 by 2035. For all, the electricity generation cost clearly appears as the single-most important factor influencing [the levelized cost of hydrogen]. ... In general, technologies that benefit from cheap electricity such as amortised nuclear (e.g., nuclear-LTO) and renewables in locations with high resource endowments (e.g., solar-ME and solar-NA) provide very competitive hydrogen, around USD 2 per kgH_2." (at 36)

Accordingly, the UBC supports the following changes to the Proposed Rule to address the concerns and considerations identified above:

Increase Formulaic Alternative for Existing Clean Generation to 10%. The Proposed Rule seeks comment on formulaic approaches to setting thresholds on the amount of existing carbon-free generation that should be allowed to qualify for the full 45V tax credit. More specifically, the Proposed Rule proposes setting a threshold at five percent of the hourly generation from minimally emitting electricity generators placed in service before January 1, 2023. The UBC respectfully submits that the threshold should be set at ten percent, and that the percentage be measured at the owner level, rather than at the facility level.

The changes we support would acknowledge the economic benefit of using already-built generation sources to facilitate the scaling of clean hydrogen to bring down its cost as quickly as possible. Using a ten percent threshold will, moreover, help maintain a robust and efficient market for EACs, right from the 45V program's start. This change would also reflect that the proposed five percent allotment is a ceiling, and that not every eligible facility will sell any, not to mention five percent, of its non-emitting nuclear capacity to hydrogen producers. Industry estimates are that not even half of the total existing non-emitting capacity will be available to hydrogen producers under the proposed five percent allowance, thus making ten percent a more reasonable proxy. It is, moreover, appropriate to measure the ten percent threshold at the owner level, rather than the facility level, to ensure hydrogen production can be configured in a manner that allows for economies of scale in hydrogen production projects and associated technology deployment and scaling. This change also should help ensure that the three hydrogen hubs utilizing nuclear power are able to proceed.

Nuclear License Renewals. The Proposed Rule also seeks comment on whether nuclear units extending their operating life should be eligible to power qualifying hydrogen production.

The UBC agrees that Treasury should treat nuclear units that apply for a license renewal as "incremental," in addition to setting a formulaic threshold at ten percent.

License renewals require major investments, and allowing a full 45V tax credit will help ensure these investments are feasible, especially in the out-years after the Section 45U nuclear production tax credit sunsets. Prior to enactment of the 45U tax credit, the U.S. was losing non-carbon emitting nuclear plants to retirements, and particularly premature retirements, at an alarming rate. We understand it is a challenge for all nuclear power plants to operate profitably without policy support. This challenge will increase in the early 2030's after state programs and the 45U tax credit sunset. The 45V tax credit can contribute to maintaining this nuclear capacity—which is needed to support ever-increasing federal hydrogen goals—over the longer term. We need to be scaling up our renewable energy infrastructure, rather than watching it erode.

Equally important from the perspective of President Biden's commitment to clean, green union jobs, nuclear facilities must make significant upgrades to plant equipment to demonstrate they can operate safely during the renewal period. The investments involve replacing and upgrading major components of the nuclear unit such as generators, turbines, heat exchangers, piping, pressure systems, and control systems, as well as expenditures necessary to satisfy new commitments made during the plant's extended operating life. In the case of pink hydrogen, these new commitments also include investments needed to construct electrolyzers and retrofit nuclear plants to accommodate hydrogen production, storage and transport. As explained above, all this work will create good-paying jobs in the building and construction trades, including for the UBC's carpenters, millwrights, and pile drivers. Accordingly, Treasury should conclude that all electricity produced by an existing nuclear unit is incremental for purposes of Section 45V once the nuclear unit has filed to extend its NRC operating license.

Support for Early Hydrogen Producers. Finally, Treasury should make an exception allowing the earliest hydrogen production facilities, such as those beginning construction by the end of 2026, to obtain EACs from existing non-emitting resources. As explained above, the DOE's Hydrogen Roadmap requires aggressive growth in hydrogen production to meet its goals. The earliest hydrogen producers will confront the most significant obstacles and up-front costs in reaching commercial operation. These early plants are also critical to jump-starting the industry. Finally, allowing these early-adopters an exception to any incrementality requirement goes hand-in-glove with the IIJA's $8 billion investment in hydrogen hubs, which alone are projected to create over 300,000 jobs.[3]

Thank you very much for your consideration of these comments. If you should have any questions or need additional information, please do not hesitate to contact the United Brotherhood of Carpenters General Office.

Respectfully submitted,

Douglas J. McCarron

[3] https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/13/biden-harris-administration-announces-regional-clean-hydrogen-hubs-to-drive-clean-manufacturing-and-jobs/