

Maximizing Tax Credit Benefits for Nuclear Plant Power Uprates: Domestic Content Research

Project Status Update







April 30, 2025

Nuclear Plant Power Uprate Tax Credits

- The Inflation Reduction Act (IRA) contains two tax credits applicable to existing nuclear plant power uprates
 - Section 45Y: Production Tax Credit (PTC) = Yearly credit based on incremental generation for up to 10 years (~\$30/MWh if wage requirements met)
 - Section 48E: Investment Tax Credit (ITC) = One-time payment for portion of capital investment (30% of investment if wage requirements met)
- Utilities select **one** of these credits after energization occurs
- Both credits are subject to further requirements that impact (increase or decrease) credit valuation
- One of these key requirements is **domestic content**



 Both the PTC and ITC contain a 10% adder if it can be shown for "new" materials associated with power uprate:

"...that any steel, iron, or manufactured product which is a component of such facility... was produced in the United States..."

- Manufactured components deemed to have been produced in the US if not less than an adjustable percentage (40-55%) of the total costs of all such manufactured products are mined/produced/manufactured in the US
- Nominal **10% adder** for ITC (e.g., 30% to 40%) while **1.1X multiplier** for PTC (e.g., \$30/MWh to \$33/MWh)
- Utilities using direct pay need to meet domestic content requirement, obtain an exemption, or "start construction" prior to the end of 2025 otherwise the <u>direct</u> pay value is zero.



LWRS Domestic Content Initiative

- Initiative Driver and Objective
 - Current proposed guidance and safe harbors for meeting domestic content requirement are **not** tailored towards nuclear power uprates
 - DOE LWRS Program Initiative Goals:
 - Assess the feasibility for uprates to meet domestic content requirement
 - Develop nuclear power uprate safe harbor approach
- Project Tasks
 - Survey utilities to confirm list of expected components impacted by uprate
 - Survey suppliers to garner insights on capabilities to deliver components domestically
 - Develop potential power uprate safe harbor approach



Utility Survey

- Contacted every current nuclear utility using industry and Nuclear Energy Institute contacts
- Responses back from ~50% thus far
- Preliminary results will change as more responses come in, but patterns clear





Supplier Survey

- Utilities provided list of potential suppliers for each component
- In-process of interviewing suppliers to understand capability of manufacturing components domestically
 - Raw material, processing, assembly, testing all important components
 - Large overlap between utilities in potential suppliers
- Results will inform DOE of capability to meet domestic content requirement and inform industry of potential suppliers and constraints



Safe Harbor Development

- In lieu of calculating adjusted percentage rule for each component, taxpayers may elect to use "safe harbor"
 - Regulations have tables for other technologies (e.g., solar, wind) listing components and "value" representing cost percentage of overall technology
 - Taxpayers may then utilize table to determine if domestic cost percentage is met
- Nuclear power uprates = addition of capacity and will need innovative approach for safe harbor table as each uprate will involve different combination of components
- Collaborative team working on developing this guidance:
 - Identify type/quantify of components for "your" uprate
 - Multiply # of components by "weighting" factor based on component cost category
 - Normalize results by total score
 - Assess strategies for meeting required adjusted percentage



Potential Safe Harbor Development Example

Component	Category	Number of Components	Total	Normalized
HP Turbine	II	1	50	0.14
Main Generator	IV	1	100	0.28
3 Condensate Pumps	II	3	15	0.04
6 Feedwater Heaters	II	6	30	0.08
Main Transformer	III	1	50	0.14
Steam Dryer	IV	1	100	0.28
Chiller	I	1	1	0.00
Fan	I	1	1	0.00
Instrumentation		10	10	0.03
Total			357	1.00



Next Steps

- Collect outstanding utility surveys and compile results
- Complete supplier survey interviews
- Formalize safe harbor approach
- Document in report and obtain nuclear industry feedback
- Issue report to DOE (September 2025)



QUESTIONS?

