NUCLEAR FABRICATION CONSORTIUM WHITEPAPER

Background
The commercial nuclear industry began to show signs of reemergence in late 2006; there was a legitimate increase in advocacy in the policy and political worlds driving towards an increased US nuclear energy portfolio. Responding to these indicators EWI met with leaders in the nuclear industry like AREVA, Westinghouse, B&W, GE, Curtiss Wright, etc. to discuss the current state-of-the-art, the manufacturing readiness of the industry, and short and medium term needs of the industry.

The nuclear reactor was invented in 1942 and the first commercial reactor went online just 15 years later in Shippingport, Pennsylvania. By the 1960’s, US regulatory bodies had developed standards to ensure public safety, mandating strict rules for design, fabrication, and qualification. Significant funds were spent to demonstrate that designs and manufacturing technologies being used were safe and of the highest quality. Due to high cost, regulatory sluggishness and public fear, it was not economically feasible to develop and deploy new technologies in the fabrication of plants and components. As a result, no notable new manufacturing technologies have been implemented since 1969.

Need
Through extensive conversations with strategic players in the nuclear industry, it was recognized that the US manufacturing base and its regulatory infrastructure must implement the technological advances that have occurred during the last several decades in order to be competitive in a global market. New manufacturing technologies that benefit the whole of industry have historically been the burden of individual companies requiring a significant monetary driver to outweigh the cost and effort of implementation. Because this was rarely the case, industry reverted to using a pre-approved process - irrespective of the potential quality, cost and safety advantages that new technology would permit.

Path Forward
EWI responded to the need for a pre-competitive, collaborative industry wide approach that would allow for the rapid vetting of the past several decades of technology development, test the practical aspects of deployment, and ensure that the technology improvements pursued will be cost effective as well as safe and of the highest quality. This proactive effort broadly supported by industry led to the creation of the Nuclear Fabrication Consortium (NFC).

EWI’s expertise in materials, joining and manufacturing technology made it uniquely qualified to lead the nuclear industry, through the NFC, to implement the critical technology advancements necessary to be competitive in this international arena. Through our most recent meetings with AREVA, Westinghouse, B&W and others, key areas of focus for the NFC include:

- Supporting industry in creation of a larger N-Stamp supplier network,
- Acting as an unbiased technology clearinghouse for manufacturing technologies whose implementation may cause needed changes in fabrication work processes,
- Developing, in close cooperation with the Nuclear Industry, new approaches and concepts and the impact on fabrication and materials of construction,
- Setting up and implementing welder and inspector training programs to help enable the necessary workforce for the upcoming construction work,
- Serving as a focal point for technology, policy and politically interested parties to share ideas and concepts associated with fabrication across the nuclear industry

The NFC is an essential component for a true and broad nuclear renaissance which will result in globally competitive plants being built, coming online safely, creating long term jobs, and ultimately providing reliable, cost effective baseline power to grid.