Nuclear Fabrication Consortium
Operated by EWI

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Dr. Steven E. Koonin
Under Secretary for Science
Department of Energy
1000 Independence Ave., SW
Washington, D.C. 20585

Dear Secretary Koonin,

In response to the Department of Energy's March 14, 2011 Request for Information (RFI), The Nuclear Fabrication Consortium (NFC) submits the following observations and recommendations for your review. The NFC was established to independently develop and deploy novel fabrication approaches and generate engineering data designed to make the US nuclear industry more competitive on a global scale while also strengthening the domestic manufacturing sector. The NFC is a membership-based consortium operated by EWI, a quarter century old, non-profit organization focused on advancing the manufacturing competitiveness of its clients through innovation. With a diverse set of members, from locally owned shops to large multi-national companies, the NFC manages nuclear fabrication research, develops nuclear specific training courses, and sponsors technical events. The NFC is currently working with the nuclear industry to demonstrate key technologies that are used in non-nuclear industries that are poised to shorten construction cycles for new nuclear plants by up to 12 months.

Within the Quadrennial Technology Review Framing Document, the DOE astutely surmises that, "Innovation in manufacturing processes, in addition to the invention of new and better products, enables increased productivity and output and creates competitive advantage." We couldn't agree more, and thus believe it makes sense that the Department integrates a clear commitment to supporting advanced manufacturing technology programs into its future planning documents.

Understanding the U.S. government will likely be in a constrained budgetary environment for the next several years, the NFC (and its parent company EWI) sees strong financial value in the DOE's investment in advanced manufacturing technology, which can be applied across all energy generation types. As you are aware, many of the hurdles associated with deploying new energy technologies relate to achieving competitive costs for installed utility-scale power. By supporting advanced manufacturing programs, the DOE will be promoting domestic capital investment and industrial innovation in new clean energy plants and equipment by reducing the cost and risk of advancing and applying new and improved manufacturing technology thereby significantly improving their affordability.

In order to strengthen U.S. leadership in clean energy manufacturing while enabling the DOE to accomplish its energy technology mission, the NFC makes the following recommendations:

1) **Create a "Technology User Facility" for Advanced Manufacturing Technologies.** The Department of Energy should adopt the "technology user facility" approach for mitigating issues

in "the valley of death" between R&D and commercial deployment – creating a facility that focuses on transitioning new clean energy technologies to a manufacturable and deployable state. Currently, scientific user facilities enable researchers to utilize high end scientific tools and equipment that are typically cost prohibitive for non-government entities to access. These facilities are, by design, used for fundamental science research and development programs. Unfortunately, there is no parallel for manufacturing technologies even though manufacturing technology underpins the cost drivers limiting many new energy technologies from becoming commercially salient. This would be a first-of-a-kind facility, not available in any other country and would provide domestic manufacturers a competitive advantage – the ability to rapidly deploy meaningful energy technologies. ***Therefore, the NFC recommends that the DOE create a technology user facility for advanced manufacturing technologies modeled after a hybrid of the Department of Defense Mantech program and the DOE Scientific User Facility model, wherein the industry can access advanced manufacturing technologies and equipment and the engineers/technicians skilled in their operation and optimization.***

2) **Repurpose Existing Assets for Manufacturing Missions.** As industries restructure and missions change for federal agencies, they often leave in their wake a variety of unused valuable physical and human capital assets. Aside from thousands of skilled employees with decades of experience, several of these sites include industrial power, water, sewage, and other infrastructure necessary to support heavy industry. A mechanism should be established to identify and evaluate workforce and facilities from these transitioned assets that are ideally suited for the manufacture of energy technologies, especially high consequence large and heavy components. These assets could be pooled together and transitioned to meet current and future needs. Part of that effort could also include stop gap measures to immediately shore up these resources in a way that prevents them from being dismantled and lost forever. ***It is thus suggested that the DOE work with industry to develop an oversight team that will identify high value at-risk assets across industries (particularly those non-energy industries such as aerospace, automotive, shipbuilding, etc., with applicable facilities and technologies) and evaluate their potential for meaningful energy component manufacturing.***

We applaud your leadership in undertaking this effort, and we certainly appreciate the opportunity to submit our comments for your review. Please contact Nate Ames, NFC Director, at 614-688-5135 (names@ewi.org) if you have any questions or need additional information regarding these recommendations.

With best regards,

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