TESTIMONY

OF

HAL THORNBERRY
VICE PRESIDENT – CONSTRUCTION
NUCLEAR DIVISION OF THE POWER GROUP
THE SHAW GROUP INC.

BEFORE THE

U.S. NUCLEAR REGULATORY COMMISSION

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Chairman Klein and distinguished members of the U.S. Nuclear Regulatory Commission, thank you for holding this meeting today to focus on the industry's readiness and capability to support construction of the next generation of nuclear power plants in the United States.

My name is Hal Thornberry, and I am Vice President of Construction for the Nuclear Division of The Shaw Group Inc.'s Power Group.

The Shaw Group Inc. is a leading global provider of technology, engineering, procurement, construction, maintenance, fabrication, manufacturing, consulting, remediation and facilities management services for government and private sector clients in the energy, chemicals, environmental, infrastructure and emergency response markets. We are a Fortune 500 company with expected fiscal 2008 annual revenues in excess of $7 billion that is headquartered in Baton Rouge, La., and employs approximately 27,000 people at its offices and operations in North America, South America, Europe, the Middle East and the Asia-Pacific region. Shaw is the Power sector industry leader according to Engineering News-Record's list of Top 500 Design Firms.

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As we enter the nuclear renaissance, Shaw is well-positioned to play a major role in the engineering, procurement and construction of the next generation of nuclear power plants, in the United States and abroad.

Shaw was founded in 1987 by Jim Bernhard – now our Chairman and CEO – and two partners as a heavy-pipe fabricating company. In a little more than two decades, Mr. Bernhard's vision transformed Shaw from a company with a 50,000-square-foot fabricating facility into one of the fast-rising corporations in the Fortune 500.

Although Shaw is only a 21-year-old company, we bring more than a century of experience to the marketplace thanks to several significant strategic acquisitions – including the purchase of Stone & Webster in 2000 and the acquisition of a 20-percent share of Westinghouse Electric Company in 2006.

Today, Shaw's Power Group is a member of the AP1000 Consortium, working with our partner Westinghouse to provide engineering, procurement and

construction management services for four AP1000^{TM} units in China – two each at Haiyang in Shandong province and at Sanmen in Zhejiang province. The first of those units is scheduled to begin commercial operation in 2013.

Closer to home, the Shaw and Westinghouse consortium won the first engineering, procurement and construction (EPC) contracts for new nuclear plants that have been awarded in the United States in more than 30 years. In April, Georgia Power signed EPC contracts for two new AP1000™ units at the existing Vogtle site near Augusta, Ga. In May, South Carolina Electric & Gas and Santee Cooper awarded the consortium EPC contracts for two AP1000™ units at the V.C. Summer nuclear plant site near Columbia, S.C

In addition, we are in negotiations with a number of other electric utilities in the United States and around the world. As you know, the NRC has stated that it expects as many as 23 combined Construction and Operating License applications for 34 units to be submitted by U.S. electric utilities by 2010. Of those, 14 units – at present – are expected to use the AP1000™ design.

If electric utilities move forward with even a fraction of those proposed nuclear plants, our industry and the NRC will face substantial challenges in the years ahead.

One of those challenges involves the global supply chain. The International Atomic Energy Agency recently said that as many as 50 countries are considering new nuclear power plants. In a world that has seen relatively little nuclear construction during the past two decades, such an ambitious build-up would likely strain existing supply chains.

As the global supply chain expands to meet the expected ramp-up of nuclear construction, our industry will face a number of hurdles, including:

- A limited number of safety-related certified suppliers of nuclear parts and components
- Competition for fabrication and manufacturing shop space – not just among nuclear power projects, but against myriad construction projects around the world as countries like the United States repair aging

infrastructure and emerging nations, such as those in the Middle East and Asia, embark on landmark building projects

- Ensuring that existing and new suppliers have nuclear-grade quality assurance programs and that they have processes in place to assure appropriate attention to document detail

- Monitoring all aspects of the supply chain to prevent the fabrication, distribution and use of fraudulent parts and components

At Shaw, we have taken a number of steps prepare for such supply chain issues.

For example, we recently announced a joint venture with Westinghouse to construct a 600,000-square-foot module fabrication and assembly facility in Lake Charles, La. This facility will primarily produce structural, piping and equipment modules for new nuclear power plants using the Westinghouse AP1000™ technology. The new module fabrication facility will use industry-leading technologies, as well as Shaw's proprietary operations management systems.

In addition, Shaw's standing as the leading supplier of fabricated pipe in the United States and the largest supplier of nuclear-grade fabricated pipe should insulate us from some of the competition for constrained supply chain resources. Also significant is the fact that while many companies allowed their nuclear certifications to lapse, Shaw's Fabrication & Manufacturing Group maintained its ASME N stamp.

Similarly, we have a long history in the area of quality assurance, which dates back to Stone & Webster's development of the first NRC-approved Nuclear Quality Assurance Program. Today, as we continue down the QA path, we are led by someone who should be familiar to the Commission and NRC staff: Geoff Grant, who served as Deputy Regional Administrator for NRC Region III.

Another challenge facing the industry is construction readiness. While no new nuclear power plants have been built in the United States since the 1980s, Shaw has found other ways to stay active in the nuclear arena.

First, our Maintenance Division is a leading supplier of outage and uprate services, with maintenance contracts for 42 of the nation's 104 operating units. Similarly, Shaw was the contractor for the restart of Browns Ferry 1, which involved some of the most recent construction work performed by the U.S. nuclear industry.

Shaw also has maintained its new-plant readiness by supporting such nuclear projects as the LES enrichment facility in New Mexico and the MOX facility in South Carolina. At the same time, we have studied the many reports issued by the Institute of Nuclear Power Operations about the lessons learned during the first generation of nuclear plant construction. Today, we are incorporating that experience and those lessons learned as the provider of engineering, procurement and construction management services at the Haiyang and Sanmen AP1000™ projects in China.

The nuclear renaissance poses an additional challenge related to construction readiness, and that is manpower. At Shaw, we forecast that we will need upwards of 10,000 craft workers during the peak of nuclear plant construction in the coming decade. When you add to that the amount of skilled labor required by our competitors and other construction industries, it is clear that our nation faces a significant manpower challenge.

At Shaw, as the nation's leading design firm in the power industry, we are fortunate to have a large number of skilled craft workers who could roll off of fossil-plant construction projects to take similar jobs as we begin to build the new AP1000™ units at Vogtle, V.C. Summer and elsewhere. Moreover, we have approximately 3,000 employees among our 27,000-person workforce who have nuclear-related experience. We believe that those two factors place Shaw in an enviable position as we move into the nuclear renaissance.

That said, like every one of our competitors, we will need to hire thousands of new craft workers in the coming years to construct the next generation of nuclear power plants.

At Shaw, we employ a "best-value contracting" approach when it comes to construction labor. This philosophy enables us to utilize both union and non-union labor to ensure that we have full access to the breadth of expertise

available in the marketplace. This approach has been successful for Shaw's Power Group and Shaw Constructors Inc., which have a history of employing union contractors on its construction projects in the United States – and of maintaining labor harmony on its worksites.

Yet, even with the ability to work with various labor partners, it is clear that the flow of talent from the current craft-labor pipeline needs to be increased.

In response, Shaw has built a dedicated team that is focused on developing and attracting the construction talent we will need for the nuclear renaissance. Our team is examining current labor availability, projecting future supply and demand, and developing networks to reach out to encourage key stakeholders to promote careers in construction.

We are working closely with the National Center on Construction Education and Research, local vocational and technical schools, high schools and colleges to create awareness about the rewarding careers that will be available to people interested in building the next generation of nuclear power plants. We are taking this message to educators so schools will develop the necessary programs and curricula to prepare students for careers in construction. And we are taking this message to students and their parents so they understand that the nuclear renaissance could conceivably offer high-paying construction, maintenance and operating jobs from the time they leave school until they are ready to retire.

Finally, Shaw's workforce development team has created an unparalleled training and certification program that provides our current hourly employees the opportunity to learn new skills and advance their careers.

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As Shaw prepares to construct the first new nuclear power plants in the United States in more than 30 years, we believe that Shaw is as well-positioned as a company can be as we enter the nuclear renaissance.

We have experience that dates back to the construction of the first commercial nuclear plant at Shippingport; we are part of the AP1000™ consortium with Westinghouse building advanced plants in China; we have a workforce that has both nuclear and large-project construction experience; and we have

unparalleled vertical integration that enables our company to provide nuclear utilities with cradle-to-grave services.

That said, Shaw's ability to help lead the nuclear renaissance requires a continued strong relationship with the NRC, and we are committed to open and beneficial interaction with the Commissioners and the NRC staff.

Going forward, there are several areas we would like to see the Commission address:

- The NRC should allocate its resources based on which combined Construction and Operating License applicants are closest to actual construction. As of October 1, the NRC had received 16 COL applications. However, not all applicants share the same level of commitment to actually move forward with construction. We believe that utilities that have signed EPC contracts or awarded letters of intent to negotiate EPC contracts should receive priority by the NRC when it comes to evaluating COL applications and related resource issues.

- The module construction facility being built by Shaw and Westinghouse should come under the NRC's construction inspection program. We believe module fabrication is more similar to construction than manufacturing, since without modularization these components and subcomponents would be constructed in the field at the job site.

- The NRC should continue to emphasize vocational and technical training programs. Given the current disparity between the supply of craft labor and the expected demand, the NRC's recently announced $15 million grant program to provide trade school scholarships and "support education in nuclear science, technology, and engineering to develop a workforce capable of supporting the design, construction and operation, and regulation of commercial nuclear facilities, and the safe handling of nuclear materials" is invaluable and should be maintained – or even expanded.

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In closing, I would like to thank you Chairman Klein and your fellow Commissioners for the opportunity to speak here today.

This is an exciting time for The Shaw Group and our industry, as we prepare for the nuclear renaissance. On behalf of Shaw, we look forward to working with the Commissioners and the NRC staff to ensure the safe design, construction and operation of a new fleet of AP1000™ nuclear power plants.

Thank you again for inviting me to participate in this panel discussion about nuclear construction issues, and I would be happy to answer any questions you might have.