

“Nuclear Energy –Limitless Possibilities”

Prepared Remarks of DOE Deputy Assistant Secretary Dennis Miotla 2009 Nuclear Energy University Programs (NEUP) Workshop August 13, 2009

I. Introduction

Welcome, to the 2009 Nuclear Energy University Program Workshop. I want to thank Senator Bennett in advance for agreeing to give closing remarks. We are honored to have him as a speaker and grateful for his support of nuclear power, nuclear education and the Idaho National Laboratory.

Forty years ago I was trying to decide what I wanted to do when I grew up. I was living in an America that was leading the world in nuclear science, technology, and manufacturing. It seemed clear then that nuclear power would inevitably become the primary source of power generation in the United States and the world for decades to come. It was clean, safe, abundant and offered “limitless possibilities”. I was energized and wanted to be a part of all those “limitless possibilities” and so I chose to pursue a career in nuclear engineering.

Forty years later and the business of nuclear energy has been through some wild ups and downs. These gyrations are mainly caused by public sentiment and economics – not by actual performance. In the U.S., 104 reactors have steadily improved performance and are safely and economically making 20 percent of our nation's electricity, with no appreciable carbon footprint. The fact that 104 reactors have survived and have continued to operate for over 30 years is an undeniable confirmation of their economic worth, durability and safety. They are held to extraordinary operating standards, public and regulatory scrutiny and expectations that no other industry would likely encounter, let alone survive.

Unfortunately our nuclear design, construction, manufacturing and R&D capabilities have not fared as well. No new commercial reactors or significant fuel cycle facilities have been built in this country in over 30 years. So the limitless possibilities that were so clear 40 years ago were not realized.

The good news is that there are definite signs of new life in the US nuclear industry. Five new light water reactor vendors are seeking NRC design certifications and a dozen or more companies are cautiously proceeding toward license applications. We expect the

first-movers to mitigate much of the licensing and financing uncertainty and provide momentum for the second-wave of new reactors to be built by 2020 - And many more will hopefully follow.

While the US is not yet building new reactors, the domestic nuclear manufacturing industry appears to be gearing up to build.

Late in June, AREVA and Northrup Grumman broke ground on a \$360M facility at Newport News to manufacture large reactor components for Areva's EPR design. Similar new starts geared to US reactor deployments are reported by Toshiba and Siemens.

Meanwhile, Electric Boat, General Dynamics and Lockheed Martin are working with reactor vendors on manufacturing and production. There are other US manufacturers large and small, including many in the Rust Belt, that I believe are cautiously looking at nuclear industry activities and are gearing up to meet potential domestic and international demands.

Several enrichment plants are in various stages of development.

There are also many new reactor concepts being developed in the US and internationally to meet a range of electrical markets and new industrial uses. I expect to see one or more Small Modular Reactor vendors seek design certification in the next few years and possibly one or more advanced reactor designs.

You know I'm almost tempted to stop right here and say the possibilities for nuclear power in the US are once again approaching "limitless". Almost.

The fact is we are not moving as fast or as boldly as other countries. China currently has only 11 operating reactors but has 14 plants under construction, and 10 to start construction within a year, including the Westinghouse AP-1000 design and a commercial scale high temperature gas reactor. In addition, China is building a sodium fast reactor to demonstrate breeding and electricity production. That means that China is tripling its capacity, and building advanced designs, while the US focuses on keeping its current reactors running and licensing a few new light water reactor plants.

Worldwide, there are 436 nuclear power plants currently operating in 31 countries. In addition, 47 are under construction with 133 additionally planned. This means that in the near future 30% of global nuclear capacity will come from new plants. It currently seems that our nuclear capacity will only increase a few percent in that period of time.

So what's the problem?

We must accept that nuclear power seems never to be one of the "favored" sources when energy issues are debated . Consider that none of the 800 Billion dollar stimulus package was allocated to Nuclear power -- also that the new House Energy bill all but ignores nuclear power. Nuclear power has supporters in Congress and a movement toward nuclear programs is entirely possible

In addition, we need to face the fact that even among experts there are conflicting views on many aspects of nuclear power and the nuclear debate is often confusing and at times irrational. If you have ever attended a public hearing on anything nuclear you realize that nuclear power is still an emotional issue for some.

I know, hopefully we all can agree, that on balance the merits of advanced nuclear power outweigh the costs and associated risks, To ensure the security of the nation, the quality of our environment and to preserve our way of life, we need a safe, abundant, clean, reliable domestic energy supply. However as a nation we have not yet concluded that the only source of that supply is nuclear power.

Regaining our position as a world leader in nuclear science, technology and manufacturing must become a national priority. It is not something that can be done easily, quickly or cheaply. There are however compelling reasons to do it.

Energy poor countries will ultimately align themselves with those who can actually deliver hardware and electricity. And, we must not overlook the need for rebuilding American manufacturing and the great potential for jobs creation that would occur with a thriving domestic nuclear industry. And while we debate how we “bin” nuclear power, it is the only technology that can serious reduce our carbon footprint.

So, how do we rebuild the industry and reestablish technical leadership in order to assure our energy security, economic growth and clean up our energy production portfolio? How can we

actively participate in the international expansion of nuclear power?

I think the answer is obvious, it's through our people.

People who have the knowledge and skills needed to design, build and operate reactors and advanced fuel cycle facilities. People who can conduct the scientific investigations necessary to develop new materials, processes and advanced analytical tools. People who are dedicated, passionate and believe in the limitless possibilities of nuclear power.

We need to find these people in our high schools, colleges and universities. We must engage them with interesting programs, challenging relevant work, advanced facilities and the financial assistance necessary to enable their participation. This is why this program exists.

As educators, you touch the lives of thousands of people every day in classrooms, in scientific communities, public speaking engagements and in the written media. You are uniquely positioned and qualified to encourage our best students to pursue careers in the nuclear industry. In the eyes of the public and

Congress you are most likely the most respected and credible sources of information on all things nuclear.

So please enjoy the next two days with us. This gathering provides a unique opportunity to unite our nation's nuclear R&D community. I hope you will leave this workshop revitalized and committed to supporting the advancement of nuclear energy and education so that this time, the “limitless possibilities” will be fully realized. I for one can not wait another 40 years for another try.

Thank you .