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Good morning. I am happy to be here with you, to discuss such an optimistic subject as "opportunities for growth and investment in North America" for the nuclear industry.

Let me begin by noting that I am a regulator, and I am prohibited by the law that created the NRC from engaging in any activity that promotes nuclear energy, including discussion of opportunities. So I will leave the enumeration of opportunities to other speakers.

Extracted remarks concerning the human capital crisis follow. The entire remarks can be seen by clicking here.

Now let me move on to the other potential challenge to "opportunities for growth" in the nuclear industry – the capital needed to operate nuclear plants – not financial, but human capital. I have often expressed my concerns about the nuclear industry's capability to muster the workforce needed to operate nuclear plants. I have yet to hear any sound answers to these concerns, so I continue to believe that this is a potentially enormous problem.

I ask this audience the same questions I have asked others: Where are we going to get the educated and skilled workers to run the nuclear plants of the future? Where are they being educated? Where are they being trained?

A 2001 nuclear industry survey estimated that demand for nuclear engineers through the end of the decade would be about 150 percent of supply and the need for radiation protection professionals would be about 160 percent of the supply. That survey predated the recent movement toward new reactor planning, and I'm told the next industry survey, due out later this year, will show an even more acute shortage of candidates to fill the waiting jobs.

And that's just the nuclear industry. I have already mentioned the NRC's needs. DOE, 10 national laboratories, a number of other government agencies, the armed forces, state and local governments and health care professions will be seeking nuclear science and engineering graduates – at the very least to replace retirees and in some instances to meet new and expanded programmatic needs.

And what about the supply to meet this demand? Well, the good news is that undergraduate enrollment is growing rapidly. Department of Energy surveys show that undergraduate enrollment at 23 reporting institutions in nuclear engineering, health physics, radiological and related fields nationwide has more than doubled to about 1500 in 2005 and that graduate enrollment has risen above 1,000.

The bad news is, according to a recent American Nuclear Society report, that number will not be sufficient. ANS notes in a recent report that it found "…nearly uniform anecdotal evidence that the current production rate for NSE [Nuclear Science and Engineering] graduates is not sufficient to meet demand. For example, one division of one of the national laboratories has recently (unsuccessfully) sought 100 nuclear scientists and engineers, and Westinghouse, General Electric, AREVA and the NRC are attempting to hire hundreds of engineers per year, many of them nuclear, from too small a pool of candidates."

I can tell you that the NRC has worked hard to develop a successful hiring strategy, and it helps our recruiting that we recently finished at or near the top in several categories rating the best places to work in government. We have been successful in hiring outstanding candidates so far, and expect to continue to pursue bright scientists and engineers for the next several years.

I can't speak for the efforts of other prospective employers, but it seems to me that none of our interests – not to mention the national interest – is going to be well served if we spend our time and money competing for a limited number of candidates. We must focus on an intensive nationwide effort to increase the talent pool.

Some of that is being done. The ANS report notes that several federal agencies either have established or are in the process of establishing nuclear science and engineering fellowships and/or research programs. The Department of Labor has several grant programs to channel new workers to high-growth industries, including nuclear energy – most notably a $125 million grant to 70 community colleges. And the National Academy for Nuclear Training, run by the Institute of Nuclear Power Operations provides $850,000 per year in scholarships – a total of $23 million since 1980.

But we should be doing even more as a nation, especially the private sector. I would urge the nuclear industry to increase its funding of university nuclear research – and do it soon. We now have 25 four-year university nuclear engineering programs in this country – down from 38 in the 1970s. The more the industry can do to augment funding for these university programs, the more likely they are to survive in the competitive academic world. We simply cannot afford to lose any more.

Beyond the existing university programs, I believe that a major industry effort is necessary to address every level of education in this country, starting with a commitment to fostering interest in science and engineering at the elementary and middle school level.

Look at it this way – the nuclear industry will be spending <u>billions</u> on hardware. It would be foolhardy not to spend the <u>millions</u> necessary to develop the human capital to operate all that expensive machinery efficiently.

I believe that this is an issue to be addressed – urgently – at the CEO level at every entity in both the public and private sectors with any involvement in the nuclear industry.