The Honorable Jeffrey S. Merrifield, commissioner of the U.S. Nuclear Regulatory Commission, made the following presentation at the 2007 Regulatory Information Conference, held March 13–15, in Rockville, Md.

As many of you already know, I made a decision last October that I would not seek a third term as a commissioner of the Nuclear Regulatory Commission. As a result, this will be my ninth and final Regulatory Information Conference (RIC) as a commissioner of the NRC.

And what a time it has been. I believe that I have given the NRC staff many challenges, and they have more than met my expectations. When I came to the commission in October of 1998, we had not issued a single license renewal for any one of our nation’s 104-reactor fleet. Today, we have renewed the licenses of close to 50 reactors, and absent some unforeseen circumstance, it appears that within a handful of years, all 104 will either be allowed to continue to operate for 60 years or be in various stages of review.

Despite the fact that we had issued three design certifications by 1999, I was still very much [out] on a limb at the 2001 RIC when I postulated that “new nuclear plant orders may become a reality in the near future.” During the late 1960s, the nation’s utilities rapidly increased their orders for nuclear power stations, participating in what Philip Sporn, past president of American Electric Power Service Corporation, described in 1967 as the “great bandwagon market.” Today, we have the potential for 32 new reactors at 23 sites. If that is not a second bandwagon, I don’t know what is.

I asked the staff to consider new ways to approach decommissioning, and they have made great strides. Consequently, we have a much better handle on our legacy waste issues than we did nine years ago. The lessons that we and our licensees have learned in this process will be of tremendous assistance when the as-yet-unbuilt reactors prepare for decommissioning late in the 21st century.

Our legal process, which was under some stress when I first got here, is far more disciplined under our new [10 CFR] Part 2 [Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders] procedures. Possessing a cadre of new, well-trained judges, we are far more prepared to handle new license applications than we were just a few short years ago. And with the new alternative dispute resolution process that I championed, I believe that the NRC will have better outcomes and less litigation in our enforcement process.

We are a more risk-informed agency. The reactor oversight process that we deployed just a year after my arrival has had a striking success in enhancing our oversight of the nation’s reactors, yet in a manner that is more open, less contentious, and less burdensome. The issue of fire protection, which has been a nettlesome issue for this agency for decades, will be put to bed through the deployment of the risk-informed fire protection program—NFPA 805.

Our international partnerships are as strong as they have ever been. Whether it is the relationships with our neighbors to the north and south or our allies across the Atlantic and Pacific, the multinational efforts that we have enhanced during my time on this commission make us a better and more informed regulator. Through our partnership with the International Atomic Energy Agency, the world’s nuclear fleet is stronger and safer than it was just a mere decade ago.

In a world where global terrorism is a reality, we have made tremendous strides in understanding better than ever before the real safety and security risks associated with the materials and facilities we regulate. The nuclear fleet we oversee was the most well-defended element of the civilian infrastructure prior to the terrible events of September 11, 2001, and it remains so today.

Finally, I am proud of how this agency has grown in its ability to communicate. Whether it is meeting with the public, welcoming the world through our Web site, or engaging in our daily dialog with the media, we are less reluctant and more articulate in our ability to communicate about who we are and what we do. Having led the NRC Communications Task Force some years ago, I am proud of the work that this agency has accomplished in spreading the word about what we do to protect people and the environment.

These have been real measurable achievements that have transformed this agency and its reputation. It was the work of a highly talented and motivated staff, and a series of commissioners who have dedicated themselves, one and all, to doing what they thought best for public health and safety. While there is much left to be done—[10 CFR] Part 26 [Fitness for Duty Programs] being one that I would like to finish before I leave—I would like to turn my attention today to what I believe are some of the more significant challenges that lie ahead for my successors on this commission.

Continued
New plant orders

One of the clear mantras that we have here at the NRC is that we are not supposed to be promoters of nuclear power. I have worked hard to maintain this position as a commissioner, and I don’t intend to do anything different today. However, the environment in which we find ourselves is changing. The issues of global warming and the role that nuclear power can play in addressing this significant environmental challenge are becoming increasingly intertwined. Today, global warming is viewed as the number one environmental issue around the world. Yet, while well-reasoned scientists may debate its origins and causes, no matter where you travel around the globe, there is general consensus that we have a problem and we need to do something about it.

Clearly, conservation must play a major role in limiting human carbon output. While alternative energy sources such as wind power and solar power also have a role to play, the fact remains that as far as large baseload generating capacity is concerned, nuclear power is the largest carbon-friendly source that is technologically deployable at the current time. I will not comment on whether that is a good or bad thing, but it is a fact.

Many of my Republican brethren may not like to hear me say this, but I believe that it is inevitable that our government will act to address global warming by enacting either a carbon tax or a cap-and-trade emissions program. Either way, the concurrent result is that nuclear generating assets will become more attractive from both an economic and environmental point of view. One way or another, we will have new nuclear plant orders in this country.

I believe that in the next 20 years, assuming continued safe operation, we could at least double the number of nuclear power plants we have in this country. If I am correct, there is a lot this agency will need to do to prepare.

License renewal process

Beyond our reactor oversight process, [license renewal] is the most important and successful program that the commission has overseen during my time here on the commission. While the first license renewal applications took the NRC staff over 36 months to complete, more recently we have been averaging these reviews in about 22 months, if there is no hearing. I believe this is a notable achievement, and a testament to the discipline and efficiency that our staff and senior managers have invested in this program.

Now that we have completed the 20-year license extension of almost half of our current fleet, I believe we need to begin the process of fully understanding what it would take to allow a further round of 20-year license extensions.

While we already have preliminary information from our Office of Regulatory Research that the pressure vessels of the existing fleet can likely be safely utilized for 80 years, we need to have a more detailed understanding of what it would take to conduct a further extension. To what extent would buried piping or cabling need to be replaced? Would changes in instrumentation and control equipment be justified or needed? Would replacement of emergency diesel generators be prudent? Early answers to these questions could have a significant impact on the investment decisions made by our licensees.

One of the major outcomes of our license renewal program is that it has created a strong incentive for many billions of dollars in investments for items such as new vessel heads, steam generators, pressurizers, injection pumps, and other major capital improvements. Long-term financing has made it much more viable for utilities to justify major upgrades and improvements in these units. A further 20-year license extension would provoke the same result.

While it may make economic sense to relicense all of the plants in our existing fleet, we need to have a better understanding of the
nounced that they are interested in exploring the use of nuclear power today is a direct outgrowth of Eisenhower’s vision. As such, our country has a moral obligation to lend a helping hand to regulators in those countries that seek the benefits of this technology. In my view, Congress should provide the NRC with additional funding off the fee base to allow this agency to take a more proactive role in assisting our regulatory counterparts worldwide. Nuclear safety should not take short shrift in the foreign aid our country provides, and I hope future commissioners and our counterparts in the State Department will see the wisdom of this view.

Conclusion

As I stated in the beginning, it has been an exciting time to be an NRC commissioner over the last nine years. As a result of the effort that my fellow commissioners and I have made over this period of time, we have created an institution that is second to none in its pursuit of excellence in the field of nuclear regulation. We have enjoyed unprecedented improvement in the operation of the plants we oversee, and with the significant achievement we have made in license renewal, our nation will enjoy the use of this carbon-friendly power generation for decades to come.

Today, we are confronted with an extraordinary level of interest in building new plants, which I believe could result in a doubling of nuclear power generation in the United States over the next 20 years. Combined with this effort, the agency will have its

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work cut out for it to prepare to deal with the potential for an 80-year license term, as well as the next steps on the long road toward resolving the spent fuel issue. When I leave the commission in June, it will be with the satisfaction that we have accomplished much as an agency, and I believe that I and the commissioners I have served with will have laid a very solid foundation for the future of this agency and for the safe and peaceful use of the atom in our country. While the face of the commission will change, I am very proud of my service and contribution to this agency, and hope that it will do as well in the future as it has done over the last nine years.