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MEMORANDUM TO: Chairman Meserve
Commissioner Dicus
Commissioner Diaz
Commissioner McGaffigan
Commissioner Merrifield

FROM: Dennis K. Rathbun, Director *DR*
Office of Congressional Affairs

SUBJECT: SENATOR DOMENICI'S SPEECH TO NATIONAL ACADEMY OF
ENGINEERING

On February 9, 2001, Senator Pete Domenici (R-NM) was scheduled to deliver a speech entitled, "Nuclear Power: The Option for the 21st Century," to the National Academy of Engineering. Dr. Peter Lyons, Senator Domenici's Science Advisor, gave the speech on the Senator's behalf. Attached is a copy of the speech.

cc: OEDO
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DOMENICI SPEECH TO NATIONAL ACADEMY OF ENGINEERING

"Nuclear Power: The Option for the 21st Century Symposium"

WASHINGTON -- U.S. Senator Pete Domenici today released the transcript of a speech being delivered on his behalf today at the annual meeting of the National Academy of Engineering in Irvine, CA.

The speech is being delivered by Domenici's science advisor, Dr. Pete Lyons, and touches on several themes growing appreciation in Congress for nuclear energy, progress of his nuclear initiative, and the need for a national dialogue on the risks and benefits of all power sources. It also touches on legislation Domenici is preparing on nuclear energy issues.

The following is the text of Domenici's remarks to the NAE Symposium, "Nuclear Power: The Option for the 21st Century?"

PETE V. DOMENICI of NEW MEXICO, UNITED STATES SENATOR
National Academy of Engineering
National Meeting/Symposium, Irvine, Calif.
February 9, 2001

I want to thank the National Academy of Engineering for convening this Symposium on such an important topic and my good friend, Chuck Vest, for asking me to participate today. Unfortunately, my Senate schedule keeps me from joining you personally.

Your subject today, "Nuclear Power: The Option for the 21st Century?" sounds very much like the national dialogue that I called for in my speech at Harvard in October 1997. In that talk, I called for a national evaluation of the role of nuclear energy and nuclear technologies. I sought to stimulate an informed discussion on the vast benefits of nuclear technologies - benefits that all too few of our citizens understand or appreciate. Above all, I stated that the nation must preserve the option of utilizing nuclear energy to meet the energy demands of future generations.

Since the Harvard speech, I've participated in countless interactions with government, industry and university groups on these subjects. There have been a number of successful legislative initiatives that are starting to offer real hope for a solid future for nuclear power.

The number of my Senate colleagues who appreciate the benefits of nuclear technologies has grown steadily and significantly. Perhaps this is best indicated by the large margins approving last year's Bill setting up an early receipt facility in Nevada for spent nuclear fuel and the subsequent razor-thin failure, by one slim vote, to override President Clinton's veto of the Bill.

You're holding this meeting in California, which is an interesting choice. Californians are not surprised to be in national headlines, but I'm sure the latest sets of headlines have not been welcomed here or anywhere else. The whole nation has watched with fascination and despair while the splendid economic engine of this State, which, if compared to nations around the world, represents the sixth largest economy, has sputtered on empty for weeks on end with no relief in sight.

Many experts are now analyzing the energy woes of California. This crisis is already leading to increasing debate on national energy policy, or our past lack of it, in Congress. It's evident that in an unfortunate number of ways, the California so-called "deregulation" was designed to fail spectacularly, which indeed it has done. There are many reasons, but certainly one was a focus on ultra-strict environmental restrictions that severely undercut California's ability to develop new generating capacity.

Even before President Bush was sworn in, I suggested to him that he create a cabinet-level energy policy board. I'm very pleased that he quickly announced creation of this entity.

I noted to him that any suggestion that the Department of Energy controls energy policy for the nation is out of touch with reality. Other agencies play major roles. For example, the Environmental Protection Agency has roles in everything from radiation standards to particulate emission standards and can block progress on energy resources irrespective of economic imperatives. The Department of Interior has thoroughly demonstrated its ability to block exploration for new fossil fuel resources; their policies contribute to sky-high and climbing prices for natural gas. I look to this new Energy Policy Development Group, chaired by the Vice President, to evaluate policies of each agency for impacts on national energy security.

The California energy crisis may provide encouragement to Congress to move ahead with improved energy policies, and I'm optimistic that nuclear energy will be one of the areas of emphasis. Senator Murkowski is now working on a National Energy Strategy Bill, which includes a number of provisions supportive of nuclear energy. I'm working on a major bill, focused exclusively on nuclear energy issues. Later in this talk I'll give you a brief flavor of my legislation.

For now, though, let me turn to discussion of some of the progress we've made in the three years since the Harvard speech. That speech occurred around the time of the Kyoto meeting. At Kyoto, we witnessed an amazing affair in which the Administration talked about the risks of global warming without ever noting that the present nuclear plants avoid increased risks or that increased use of nuclear energy could reduce those risks. I've said many times that we will not meet the Kyoto goals without maintaining nuclear energy as a strong option for our energy needs.

Unfortunately, that Administration was determined to undermine support for nuclear technologies. There was no enthusiasm for a rebirth of a nuclear industry and nuclear engineering programs were ending across the nation.

There's been real progress in these three years, although certainly most of it was accomplished by Congress and not the Administration. Now there's the Nuclear Energy Research Initiative, designed to foster serious study of nuclear topics. Funding for this effort increased by more than 50 percent this year. There's a Nuclear Energy Plant Optimization program, exploring approaches to extend the lifetimes of existing plants.

This year marks the start of the Nuclear Energy Technology Program, a \$7.5 million effort to seriously explore specific areas of technology that can impact the market for new plants. Most of these funds are dedicated to studying Generation IV reactors ? reactors that would:

- be cost competitive with other energy sources,
- have no possibility of core meltdown,
- minimize proliferation concerns, and
- reduce production of high level waste.

Building on this Generation IV program, I'm very optimistic that in the next few years we will witness construction of a new reactor, perhaps to serve as a demonstration testbed for new technologies. I've been watching with great interest the progress in South Africa on their Pebble Bed reactor project. Not too many years ago, the thought of new reactor construction in the U.S. would have been a pipedream but I've heard Corbin McNeil say recently that it isn't impossible today.

Changes at the Nuclear Regulatory Commission helped immensely with the rebirth of interest in nuclear plants, leading to dramatically increased optimism about the future of the industry. It has changed from an agency that took forever studying an issue to one committed to focused action. The licenses of five reactors have now been extended by the NRC; and it stuck to tough schedules in completing those actions. Both the NRC and Congress deserve credit for these changes.

The Harvard speech noted the close interplay between civilian and military programs. We simply won't realize the potential of civilian nuclear energy if the military aspects of nuclear technologies aren't carefully controlled.

Justified public concerns with military uses of nuclear technologies can, if not carefully addressed, completely poison public perception of the civilian benefits from nuclear energy. Thus, our non-proliferation programs with Russia are critical for the future of nuclear energy, to say nothing of their importance to our national security.

These cooperative programs with Russia are highly challenging; they face immense difficulties. Nevertheless, programs like: Materials Protection, Control, and Accounting; Initiatives for Proliferation Prevention; the Highly Enriched Uranium Agreement; and plutonium disposition are all making real progress. The Nuclear Cities Initiative received a significant funding boost this year, along with strong guidance that future funding will be conditioned on progress against measurable milestones.

These non-proliferation programs are a critical investment in our national security, and I've strongly championed them. But I also asked, without success, the past Administration to improve its coordination of these programs. A national coordinator was part of the Nunn-Lugar-Domenici legislation in 1996 and it was emphasized again in the current Defense Authorization legislation. Congress would have more confidence in these programs and in their cost efficiency if their coordinatin were dramatically improved. Most importantly, the effectiveness of these programs would be enhanced with careful coordination.

You may have noted the strong support for these non-proliferation activities from the Bush Administration. For example, Condoleezza Rice, the new National Security Advisor, recently noted that: American security is threatened less by Russia's strength than by its weakness and incoherence. This suggests immediate attention to the safety and security of Moscow's nuclear forces and stockpile.

There is more encouragement for the non-proliferation programs from the recent Baker-Cutler Report. That Report noted: Russia's nuclear stockpile is the most serious national security threat we face today. I'm looking forward to working with the new Administration on these critical issues.

In the civilian area, there are two overarching issues that frame the debate on nuclear energy issues. One involves radiation standards and the public's fears of radiation. The other involves demonstration of a credible national strategy for spent nuclear fuel. These are the two areas frequently highlighted by anti-nuclear groups. Unfortunately, these groups don't invest much, if any, time in working to address these issues with credible solutions, so that the benefits of nuclear technologies can remain available to mankind.

We still use radiation standards that are based on questionable scientific knowledge. In June, responding to my request, the GAO issued a study of this issue, highlighting the lack of scientific data on which current standards are based and the immense costs that we may be incurring by using highly conservative standards. That report also highlighted the serious impact in cost and uncertainty caused by conflicting guidance from the EPA and the NRC in radiation standards -- a conflict made all the more frustrating since the National Academy has weighed in with strong statements questioning the scientific credibility of the EPA draft standards for Yucca Mountain. This is precisely the type of conflict between agencies that I hope can be addressed with the President's initiative creating the Cabinet-level energy policy group.

To address the issues highlighted in the GAO report, Congress created a research program focused on the health effects of low doses of radiation. This program within the Department of Energy is designed to explore, for the first time, the molecular and cellular bases for radiation standards. It is now entering its third year. I've been surprised that this program has not received appropriate levels of support from the past Administration, and there's been no evidence of EPA interest in its progress. Fortunately, Congress stepped in to provide the necessary resources.

This low-dose, radiation effects program offers our best hope for increased scientific understanding on which better standards eventually can be based. I might note that just recently I became aware of a parallel, and even larger, program underway in France. Since then I proposed actions to ensure that

these two major programs are coordinated at the governmental level, and I understand that this coordination is taking shape now.

Perhaps the most frustrating area of challenge for future use of nuclear energy involves our lack of credible strategies to deal with spent fuel. I've stated repeatedly that I believe the barriers to progress in this area are entirely political, and not technical. This is one area that I fear could doom our nation's prospects for future use of nuclear energy if we don't make progress. We continue to focus on Yucca Mountain as a permanent repository, despite the fact that it is not even obvious that long term disposal is in the best interests of all our citizens.

Depending on our future demands and options for electricity, we may need to recover the tremendous energy that remains in spent fuel. Furthermore, strong public opposition to disposal of spent fuel, with its long-term radiotoxicity, may preclude use of repositories that simply accept and permanently store spent fuel rods.

For these reasons, I've favored the use of centralized storage for a period of time in a carefully monitored, fully retrievable, configuration. At a minimum, this type of storage could allow concentration of the spent fuel from its 70 plus locations around the country into one or more centralized, tightly controlled storage areas. Such a monitored storage facility can allow future generations to evaluate their own needs for energy and decide on appropriate reuse of spent fuel or final disposition. In a very real sense, a centralized monitored retrievable storage facility for spent nuclear fuel represents a national nuclear fuel reserve for future generations.

Congress has worked very hard to make progress on the spent fuel issues. As I mentioned earlier, last year, a bill passed both Houses of Congress by large margins that created an "early receipt facility" in Nevada; it also would have created an Office within the Department to seriously evaluate strategies for spent fuel. The vote for passage was 253-167, a veto-proof majority, in the House and 64-34 in the Senate -- those are both impressive margins. Unfortunately, President Clinton vetoed this bill, and the veto override vote failed in the Senate by a single vote.

Despite that veto, Congress has still created opportunities for progress on spent fuel strategies by funding transmutation research. This year, \$34 million are set aside for an Advanced Accelerator Applications, or AAA, program, which includes waste transmutation.

Transmutation, as part of an integrated national or international strategy for spent fuel, could dramatically alter the radiotoxicity of spent fuel and allow recovery of much of the residual energy. There's tremendous international interest in transmutation, and the new AAA program encourages cooperative programs. I've been assured that transmutation is technically feasible; now we need solid research and engineering results to provide a basis for assessing all the issues associated with its economic, environmental, and proliferation impacts.

I'm very hopeful that the new Administration will encourage serious work on spent fuel strategies, including transmutation. The future of nuclear energy requires that we demonstrate to the public that scientifically sound solutions for spent fuel exist. We need to do the research today that can allow tomorrow's leaders to decide whether some forms of reprocessing and transmutation can lead to reduced risks and enhanced benefits from nuclear energy.

I mentioned earlier that at least several major legislative packages are under development. The National Energy Strategy Bill of Senator Murkowski is a very broad piece of legislation encompassing all forms of energy. It will be a major contribution toward a coherent energy policy for the nation. In addition, I'm hard at work on a Bill that focuses specifically on the nuclear energy side of the issue. Both Bills establish an Office within the Department of Energy to develop and coordinate strategies for spent nuclear fuel.

It's too early to discuss specifics of my Bill, but let me note that it treats nuclear energy issues in five broad areas:

- Assuring a continued supply of nuclear energy,
- Encouraging construction of new nuclear power plants,
- Treating nuclear energy on a level playing field with other energy sources,
- Identifying solutions for spent fuel, and
- Further streamlining the Nuclear Regulatory Commission.

Before closing, I'd like to mention one additional subject which should be included in your discussions about energy policy. It involves the increasing globalization of the world's economies. I don't believe that the world can develop in the peace and harmony that we all want unless the large differences between the "have" and "have-not" nations are addressed.

The standards of living for billions of people lag the Western world by extremely large factors. Reliable sources of electricity underpin the economies of the developed world. They are one of the factors determining each nation's standard of living and are certainly one of the prerequisites for modernization in all developing nations. As you are well aware, there is now a vast gulf in energy usage per capita between Western nations, especially the United States, and the developing world.

I firmly believe that globalization offers immense benefits to the American people. We benefit from a network of global trading partners. These partners help create markets for our high technology products. But this will happen only if the rest of the world increases its standards of living to levels that closely match our own. And that won't happen unless they have access to clean, reliable, low cost sources of electrical power.

Nuclear energy, appropriately designed to avoid proliferation concerns and operate in absolute safety, can play a major role in energizing the rest of the world. It can be one of the solutions to providing global energy needs and helping to bring many of the poorer economies into the 21st century.

In closing, let me emphasize that all of us need to remind the public that the standard of living we enjoy today would be lost without reliable, clean, cost-effective electricity. It enables countless technologies, from the computers we use today, to the washing machines that have replaced old hand-cranked units.

And as we remind the public of the importance of supplies of electricity, two words must be part of every discussion on energy alternatives: risks and benefits. No energy source is free of both. Anti-nuclear groups have focused only on the risks involved with nuclear. They don't discuss its benefits, or discuss the solid technical solutions for the risks. Unfortunately, their actions do not present a balanced public understanding of this complex issue. The National Academy of Engineering is very well positioned to advance precisely such discussions.

We need to seize opportunities to note that energy production, by any technology, represents a trade-off between risks and benefits. The public must have the information to fairly judge both sides of this equation for each type of energy source. With that kind of comparison, which you and your colleagues can help to frame, nuclear energy fares very well. From this debate, and from continued progress on many fronts, I believe that nuclear energy will play an increasing role in future domestic and global electrical supplies.