Agreement does an excellent job of meeting both objectives. For all the reasons I have outlined today, I supported the free-trade agreement when it was in the Finance Committee, and I will support it on the floor of the Senate. I urge my colleagues to do the same.

## MORNING BUSINESS

Mr. SALAZAR. Mr. President, I ask unanimous consent that there be a period of morning business, with Senators permitted to speak therein for up to 10 minutes each.

The PRESIDING OFFICER (Mr. SANDERS). Without objection, it is so ordered.

## NOMINATIONS

Mr. LEAHY. Mr. President, as the Senate begins its final work period of the year, I want to thank those members of the Judiciary Committee who have been working so hard throughout this year in helping us fulfill our duties with respect to nominations.

Given the work of the Senators serving on the Judiciary Committee, the Senate is in position to confirm 40 judicial nominees for lifetime appointments to the Federal bench this year, including 6 more of this President's circuit court nominees.

The Senate has already acted to confirm 36 lifetime judicial appointments. Remaining on the Senate Executive calendar are the nominations of John Daniel Tinder to the Court of Appeals for the Seventh Circuit, Amul R. Thapar to the Eastern District of Kentucky, Joseph Normand Laplante to the District of New Hampshire, and Thomas D. Schroeder to the Middle District of North Carolina. When they are confirmed, and with the cooperation of Senators they can be confirmed this month, we will have exceeded the yearly total in each of the last 3 years when a Republican majority managed the Senate and the consideration of this Republican President's nominations. Indeed, we are proceeding on vacancies before they arise in some cases.

When we conclude our work on judicial nominations this year, we will have exceeded the totals in 2004, 2005, or 2006 when a Republican-led Senate was considering this President's nominees. We are exceeding the totals confirmed in 1996, 1997, 1999 and 2000, when a Republican-led Senate was considering President Clinton's nominees. We are even exceeding the totals in 1989 and 1993 when a Democratic-led Senate was considering President Clinton's nominees. This year's total will be almost two dozen more confirmations than were achieved during the 1996 session when Republicans refused to proceed to confirm any of President Clinton's circuit court nominations.

We continue to make progress on circuit court nominations. The six circuit court nominees confirmed this year matches the total circuit court con-

firmations for 2001. We will have exceeded the circuit court totals achieved in 2004 when a Republican-led Senate was considering this President's circuit nominees; in 1983, when a Republican-led Senate was considering President Reagan's nominees; in 1993, when a Democratic-led Senate was considering President Clinton's nominees; and, of course, the 1996 session during which a Republican-led Senate did not confirm a single one of President Clinton's circuit nominees the entire session.

It is a little known fact that during the Bush Presidency, more circuit judges, more district judges—more total judges—were confirmed in the first 24 months that I served as Judiciary chairman than during the 2-year tenures of either of the two Republican chairmen working with Republican Senate majorities.

I continue to try to find ways to make progress. Last month, I sent the President a letter urging him to work with me, Senator SPECTER, and home State Senators to send us more well-qualified, consensus nominations. To reward me for reaching out again and extending the olive branch to him, this President responded not by replying to my letter but by a much ballyhooed partisan speech before the Federal Society annual dinner.

I have been concerned that several recent nominations seem to be part of an effort to pick political fights rather than judges to fill vacancies. For example, President Bush nominated Duncan Getchell to one of Virginia's Fourth Circuit vacancies over the objections of both respected Virginia Senators, one a Republican and one a Democrat. They had submitted a list of five recommended nominations, and specifically warned the White House not to nominate Mr. Getchell.

In addition, we have succeeded in dramatically lowering vacancies and, in particular, circuit vacancies. We have helped cut the circuit vacancies from a high water mark of 32 in the early days of this administration to as low as 13 this year. Contrast that with the Republican-led Senate's lack of action on President Clinton's moderate and qualified nominees that resulted in increasing circuit vacancies during the Clinton years from 17 when he was inaugurated to 26 at the end of his term. During those years, the Republican-led Senate engaged in strenuous and successful efforts under the radar to keep circuit judgeships vacant in anticipation of a Republican President. More than 60 percent of current circuit court judges were appointed by Republican Presidents, with the current President having appointed more than 30 percent of the active circuit judges already.

Of the remaining vacancies, 20—more than one-third—have no nominee. Of the 17 vacancies deemed by the Administrative Office to be judicial emergencies, the President has yet to send us nominees for 8, nearly half of them. Of the 14 circuit court vacancies, 4—

about one-third—are without a nominee. If the President would work with the Senators from Michigan, Rhode Island, Maryland, California, New Jersey, and Virginia, we could be in position to make even more progress.

Of the vacancies without any nominee, the President has violated the timeline he set for himself at least 12 times—12 have been vacant without so much as a nominee for more than 180 days. The number of violations may in fact be much higher since the President said he would nominate within 180 days of receiving notice that there would be a vacancy or intended retirement rather than from the vacancy itself. We conservatively estimate that he also violated his own rule 13 times in connection with the nominations he has made. That would mean that with respect to approximately 46 vacancies, the President is out of compliance with his own rule more than half of the time.

So I thank the members of the Judiciary Committee for their hard work considering these important nominations. I thank especially those Senators who have given generously of their time to chair confirmation hearings throughout the year.

## ROADRUNNER COMPUTER

Mr. DOMENICI. Mr. President, today's Washington Post Science section contains an excellent summary on the work America is doing to develop the fastest computers in the world and the benefits to all of us from such computers.

The headline on the story, "Faster Computers Accelerate Pace of Discovery," captures today and hints at tomorrow for science, using computers that have processing speeds of more than a thousand trillion calculations per second. That speed is known as a petaflop, in computer science speak.

I am proud that the first petaflop computer in the world is likely to be at Los Alamos National Laboratory in my home State of New Mexico. Working in conjunction with IBM, LANL's "Roadrunner" computer holds out the promise of immense advances in almost every aspect of scientific inquiry.

In the area of nuclear weapons, for example, computing power increases are critical. Two decades ago, this Nation decided to stop underground testing of nuclear weapons. Yet the necessity of certifying the reliability and performance of our nuclear stockpile remains. How could we do away with underground testing and still have the three weapons lab directors certify to the President that our weapons were safe and reliable. We decided to adopt a program called Science-Based Stockpile Stewardship. Essentially, we decided to simulate a nuclear weapons explosion using computer power. Clearly, America needed more computing power when we made this decision. "Roadrunner" is an important step toward making sure that our nuclear stockpile will work if ever needed.

One of the most interesting uses of this enormous computer power is modeling climate change. It is ironic that many of those who oppose additional funding for the national laboratories want a more aggressive stance on the question of climate change and ways to ameliorate it, are the same people who support a House-passed Energy and Water Appropriations bill that would reject more funding for ''Roadrunner.''

Mr. President, we are in the middle of negotiations on the Energy and Water appropriations bill right now. Adoption of the House-passed bill will not only set back our work on computing power and climate change but will be a disaster for certification of the reliability of our nuclear weapons. I hope that all Members of Congress will read today's article in the Washington Post to get an idea of what is at stake as we set policy in the future.

Mr. President, I ask unanimous consent that the entire article be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

[From the Washington Post, Dec. 3, 2007]
FASTER COMPUTERS ACCELERATE PACE OF DISCOVERY

(by Christopher Lee)

Sometime next year, developers will boot up the next generation of supercomputers, machines whose vast increases in processing power will accelerate the transformation of the scientific method, experts say.

The first ''petascale'' supercomputer will be capable of 1,000 trillion calculations per second. That's about twice as powerful as today's dominant model, a basketball-court-size beast known as BlueGene/L, at the Energy Department's Lawrence Livermore National Laboratory in California that performs a peak of 596 trillion calculations per second.

The computing muscle of the new petascale machines will be akin to that of more than 100,000 desktop computers combined, experts say. A computation that would take a lifetime for a home PC and that can be completed in about five hours on today's supercomputers will be doable in as little as two hours.

''The difficulty in building the machines is tremendous, and the amount of power these machines require is pretty mind-boggling,'' said Mark Seager, assistant department head for advanced computing technology at Lawrence Livermore. ''But the scientific results that we can get out of them are also mind-boggling and worth every penny and every megawatt it takes to build them.''

A leading candidate to become the first petascale machine, the ''Roadrunner'' supercomputer being developed by IBM in partnership with the Energy Department's Los Alamos National Laboratory, will require about 4 megawatts of power—enough to illuminate 10,000 light bulbs, said John Hopson, program director for advanced simulation and computing at Los Alamos in New Mexico.

But scientists say Roadrunner and its cousins will make possible dramatically improved computer simulations. That will help shed new light on subjects such as climate change, geology, new drug development, dark matter and other secrets of the universe, as well as other fields in which direct experimental observation is time-consuming, costly, dangerous or impossible.

In fact, supercomputers and their simulations are becoming so powerful that they essentially have introduced a new step in the time-honored scientific method that moves from theory to hypothesis to experimental confirmation, some experts contend.

''They are a tool that really helps stimulate the imagination of scientists and engineers in ways that previously weren't possible,'' said David Turek, vice president of supercomputing at IBM. ''You had theory and hypothesis and experimentation. Well, now scientists are admitting that computation is an important part of this, as well.''

''Nature is the final arbiter of truth,'' said Seager, the Lawrence Livermore computer scientist, but ''rather than doing experiments, a lot of times now we're actually simulating those experiments and getting the data that way.

''We can now do as much scientific discovery with computational science as we could do before with observational science or theoretical science.''

A particularly fruitful area of computer modeling has been the study of global climate change. Ten years ago, experts agreed that humans probably were contributing to global warming. Now, in part because of a 10,000-fold increase computing power and better accuracy in climate simulations, scientists are sure of it.

One result is that computer climate models can now simulate atmospheric and oceanic conditions and, crucially, how changes in each affect the other, experts said. Now the worry is not that computing power is inadequate but that the aging of NASA's weather satellites will lead to a shortage of input data before long, Seager and others said.

Petascale computers also will make it possible to predict, say, the effect of an earthquake on every building in downtown Los Angeles, experts said. Current models cannot yield predictions for areas smaller than a square mile or two. The increased detail could help shape building codes and be a valuable tool in evacuation planning and disaster preparedness.

Computer simulations also help assess the reliability, safety, security and performance of weapons in the U.S. nuclear stockpile, years removed from any real-life nuclear tests. ''Nuclear weapons are the quintessential example of something you can't really test anymore, so a lot of it has to be done computationally,'' said Hopson, the Los Alamos scientist.

Other potential uses of petascale computers include better simulations of what happens when stars explode into supernovas and die, and new and more refined analyses of experimental drugs and their effects on disease and interactions with other medications, experts said.

Still another is the modeling of the bird flu virus and how it might evolve to become more communicable and lethal—knowledge that could help scientists develop a vaccine in time to use it and to inform public health planning. Petascale computers are also expected to lead to more potent models for Wall Street to calculate risk and predict the fate of financial instruments, as well as more advanced digital prototypes of automobiles and jet aircraft, further reducing the need for physical mock-ups.

The remarkable advances in computing power of recent decades are frequently attributed to the tenet known as Moore's Law, named for Intel co-founder Gordon E. Moore, which says that progress in building chips doubles the power of microprocessors about every 18 months. But that alone does not explain the leaps in supercomputing, scientists said.

Today's supercomputers rely not only on better ''compute nodes'' (made up of faster chips and more memory), but also on scientists' ability to ''gang'' hundreds of thousands of those nodes together in a single machine and to devise better ways of having them communicate with one another and divide up the work of complex problem solving.

''If you ran today's code on yesterday's computers, they would be much faster,'' said Raymond Bair, director of the Argonne Leadership Computing Facility at the Energy Department's Argonne National Laboratory near Chicago. ''People have figured out how to solve the problems faster.''

Even before a petascale computer is a reality, scientists are anticipating the next big milestone, the exascale machine—a thousand times more powerful still, and capable of 1 million trillion calculations per second. But they'll have to wait. That one isn't expected until about 2018.

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## HONORING OUR ARMED FORCES

### NATHAN GOOD IRON

Mr. DORGAN. Mr. President, I wish to offer a brief statement in tribute to Nathan Good Iron.

Nathan J. Good Iron was a high school basketball star, a college student, a new father. This young man of promise died in an enemy attack in Afghanistan a year ago while serving with a unit of the North Dakota National Guard, the 188th Air Defense Artillery. His family learned the terrible news on Thanksgiving Day of 2006.

Nathan was a Hidatsa Indian, a member of the Three Affiliated Tribes of Mandan, Hidatsa and Arikara of the Fort Berthold Reservation. For more than a thousand years, the Hidatsa people have lived in just a single place, along the banks of the Missouri River in North Dakota. Always a pastoral people, they resided in sizeable cities, cultivating extensive, lush gardens along the river, hunting buffalo and other game in the prairies around them. When white adventurers and traders began showing up, the Hidatsa were welcoming and friendly. Their villages, and those of their nearby allies—the Mandan and Arikara—were centers of trade and exploration.

But when it was necessary, when enemies invaded their homeland, the Hidatsa proved themselves strong and valiant warriors, establishing a long, epic history of courage and valor on the battlefield.

Such traits are not easily lost by a civilization. They persist through the generations. And the Hidatsa now have a new symbol of bravery, Nathan Good Iron.

Nathan was recently honored by a 3-day powwow in his memory. Powwows, which have long and rich traditions, are always events of high pageantry and symbolism. Soldiers and veterans receive special recognition at these powerful exhibitions and so it is appropriate that Nathan was honored with this noteworthy memorial powwow.

That powwow was an occasion for remembrance and joy for Nathan's 25 years of life, a proud memorial for his youthful sacrifice, and recognition of his patriotism, his championship of democracy, and his courageous willingness to put himself in harm's way when America called.