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DAVID K. GARMAN NOMINATION

HEARING

BEFORE THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

TO

NOMINATE DAVID K. GARMAN TO BE UNDER SECRETARY FOR ENERGY, SCIENCE AND ENVIRONMENT OF THE DEPARTMENT OF ENERGY

APRIL 6, 2005

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DAVID K. GARMAN NOMINATION

WEDNESDAY, APRIL 6, 2005

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The committee met, pursuant to notice, at 10:25 a.m. in room SD–366, Dirksen Senate Office Building, Hon. Larry E. Craig presiding.

OPENING STATEMENT OF HON. LARRY E. CRAIG, U.S. SENATOR FROM IDAHO

Senator CRAIG. Good morning, everyone. The committee will come to order.

We are here this morning to consider the nomination of David Garman to be the Under Secretary for Energy, Science and Environment. Of course, Dave is no stranger to us. He has served both on this committee and as chief of staff to our former chairman, Senator Frank Murkowski, as well as in numerous other positions both in Senate offices and at the Department of Energy.

Anyone who has worked with him I think knows that he is a highly competent, devoted public servant. We are indeed fortunate to have someone of his caliber willing to accept the position for which he is being considered.

Mr. Garman, David, welcome to the committee for this hearing to consider your nomination. I want to thank you for your willingness to continue to serve the President and our country.

The rules of this committee which apply to all nominees require that they be sworn in in connection with their testimony. So if you would please rise and raise your right hand.

I do solemnly swear that the testimony—I should say: You do solemnly swear that the testimony you are about to give to the Senate Committee on Energy and Natural Resources shall be the truth, the whole truth, and nothing but the truth.

Mr. GARMAN. I do.

Senator CRAIG. Please be seated.

Before you begin your testimony, I will ask you three questions that are addressed to each nominee before the committee. The first is: Will you be available to appear before this committee and other Congressional committees to represent departmental positions in response to issues of concern to the Congress?

Mr. GARMAN. I will.

Senator CRAIG. Are you aware of any personal holdings, investments, or interests that could constitute a conflict or create an ap-

pearance of such a conflict should you be confirmed and assume the office for which you have been nominated by the President?

Mr. GARMAN. Mr. Chairman, my investments, personal holdings, and other interests have been reviewed both by myself and the appropriate ethics counselors within the Federal Government. I've taken appropriate actions to avoid conflicts of interest. There are no conflicts of interest or appearances thereof to my knowledge.

Senator CRAIG. Are you involved or do you have any assets held in blind trust?

Mr. GARMAN. No, I do not.

Senator CRAIG. Before I ask you, Dave, for your statement and the introduction of any family you may have with you, are there any members of the committee that would like to make any opening comment?

STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM NEW MEXICO

Senator BINGAMAN. Mr. Chairman, let me just say that I strongly support Dave Garman's nomination for Under Secretary. I think he is extremely well qualified. We are fortunate, as you said, to have him willing to serve and continue serving in government, and I hope that we can very quickly confirm his nomination.

Senator CRAIG. Thank you.

Senator Murkowski.

STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR FROM ALASKA

Senator MURKOWSKI. Thank you, Mr. Chairman, and I too want to reiterate my support for the nomination of Mr. Garman. We have had a long relationship over many years and he has been a friend to my State, and I look forward to working with you in your new capacity.

Mr. Chairman, I am not going to be here probably more than 5 minutes this morning. I do have some questions I would like to submit to Mr. Garman for the record as they relate to the natural gas pipeline and to gas hydrates specifically. But again, I do want to give my complete and wholehearted support for the nomination of Mr. Garman.

Thank you.

Senator CRAIG. Well, thank you. Questions, yours and others, will be submitted to the nominee for his response, I am sure prior to moving his nomination to the floor.

Senator MURKOWSKI. Thank you.

Senator CRAIG. Thank you.

David, with that let me turn to you. You are certainly free to introduce who you would like and the committee looks forward to hearing your statement.

TESTIMONY OF DAVID K. GARMAN, NOMINATED TO BE UNDER SECRETARY FOR ENERGY, SCIENCE AND ENVIRONMENT, DEPARTMENT OF ENERGY

Mr. GARMAN. Thank you, Mr. Chairman, and I would like to introduce just two people. With me today is my wife Kira, to whom I'm most grateful for allowing me to continue in public service in

a capacity that, frankly, sometimes presents some personal burdens for her and challenges for our young family.

Secretary Bodman of course supported my nomination to the White House and President Bush may have nominated me, and this committee and the Senate will yet determine whether or not I am confirmed. But it was my wife Kira at the very outset of this process who gave her unqualified consent and support, without which I would not be sitting here today for this purpose. So I am very grateful for that.

Senator CRAIG. I think we all understand how that works.

[Laughter.]

Mr. GARMAN. Also with me is my mother-in-law, Bonnie Finkler, of Arlington, Virginia. My parents had hoped to be here, but a last minute health issue prevented that, but we're thinking of them as well.

It is an honor for me to appear today as the President's nominee to be the Under Secretary of Energy. Having spent nearly 21 years serving the Senate in a variety of positions for two Senators and two committees, including this committee, and having testified before Congress at least 33 times and before this committee 7 times by our count, I trust I'm not much of a mystery to anyone here. Therefore, I'll briefly outline what I hope to focus on as Under Secretary should I be confirmed under the leadership of the President and Secretary Bodman.

The law is clear, Mr. Chairman, with respect to a key responsibility of the Under Secretary of Energy. Title 42, section 7132, of the U.S. Code says that, in addition to the duties that the Secretary shall prescribe, and I quote, "The Under Secretary shall bear primary responsibility for energy conservation," unquote.

The law is rarely so explicit in its description of the responsibilities for sub-cabinet officers. Thus, while some may find it unusual that no Assistant Secretary for Energy Efficiency or Conservation, as it used to be called, has ever been nominated to serve as Under Secretary, I view this as an unprecedented opportunity to carry on what I have learned as the Assistant Secretary into the Office of the Under Secretary and to serve in accordance with the law's direction.

Beyond that responsibility, I hope to assist Secretary Bodman and Deputy Secretary Sell in institutionalizing new management and rigor and information-based decisionmaking capability at the Department of Energy. As you know, the Department is divided between two major sets of line organizations. The national security side of the Department is comprised of the National Nuclear Security Administration, which is about a $9.2 billion enterprise.

The other side of the Department, the side for which I will bear responsibility if confirmed, is what we refer to as ESE, for Energy, Science, and Environment. ESE embodies nearly $14 billion worth of work on an annual basis, mainly comprised of energy research and development, demonstration, deployment, environmental cleanup, legacy management, radioactive waste management, and other activities.

Now, the NNSA side of the Department functions as a cohesive single organization. The ESE side of the Department thus far does not. It's comprised of institutional stovepipes and, speaking can-

didly, we face a continuing challenge in overcoming the difficulties this presents. For example, we have not done as good a job as we should of coordinating the activities of ESE offices. We have not done as good a job as we should in performing the crosscutting analysis we need to justify our budgets to the Congress. We have not done as good a job as we should in presenting information to the Secretary and the Deputy Secretary for timely decisions, nor have we consistently had the means to bring the best information to bear in support of those decisions.

In short, we have not undertaken sustained strategic management to the degree that we could or should. I do not mean to sound overly critical of the Department or the fine work that it has accomplished. Indeed, the Department has made great strides in many of these areas over the last 4 years. By one measure, the President's management agenda, DOE is one of the top performing and perhaps the most improved agency in the government.

Having said that, I believe that it is the expectation of everyone in this room that DOE can do better, and I know that Secretary Bodman has made it abundantly clear to all of us inside the Department that DOE will do better.

With the steadfast support of this committee, the Senate, and the Congress as a whole and with Secretary Bodman's strong leadership, I truly believe the Department is entering a time of remarkable opportunity. I am humbled and enthusiastic about the prospect of being a part of the Department at this exciting time and I am grateful for the committee's prompt consideration of my nomination.

I'm pleased to answer any questions the committee may have, either today or in the future, and I thank you, Mr. Chairman.

[The prepared statement of Mr. Garman follows:]

PREPARED STATEMENT OF DAVID K. GARMAN, NOMINATED TO BE UNDER SECRETARY FOR ENERGY, SCIENCE AND ENVIRONMENT, DEPARTMENT OF ENERGY

Mr. Chairman, Senator Bingaman, and members of the Committee, it is an honor for me to appear today as the President's nominee to be the Under Secretary of Energy.

Having spent nearly 21 years serving the Senate in a variety of positions for two Senators and two Senate Committees, including this Committee, and having testified before the Congress at least thirty three times, including seven occasions before this Committee, I trust I am not much of a mystery to anyone here. Therefore, I will briefly outline what I hope to focus on as Under Secretary, should I be confirmed, under the leadership of President Bush and Secretary Bodman.

The law is clear, Mr. Chairman, with respect to a key responsibility of the Under Secretary of Energy. Title 42, section 7132 of the U.S. Code says, that in addition to the duties the Secretary may prescribe, "(T)he Under Secretary *shall* bear primary responsibility for energy conservation."

The law is rarely so explicit in its description of responsibilities for sub-cabinet officers. Thus, some may find it unusual that no Assistant Secretary for Energy Efficiency (or Conservation as it used to be called) has ever been nominated to serve as Under Secretary. I view this as an unprecedented opportunity to carry what I have learned as Assistant Secretary for Efficiency and Renewable Energy into the Office of Under Secretary, and to serve in accordance with the law's direction.

Beyond that responsibility, I hope to assist Secretary Bodman and Deputy Secretary Sell in institutionalizing new management rigor and information-based decision making capability at the Department of Energy (DOE).

As you know, the Department is divided between two major sets of line organizations. The national security side of the Department is comprised of the National Nuclear Security Administration, with about a $9.2 billion annual budget.

The other side of the Department, the side for which I will bear responsibility if confirmed, is what we refer to as "ESE" for Energy, Science and Environment. ESE

embodies nearly $14 billion of work we undertake each year in energy research and development, demonstration and deployment; environmental cleanup, legacy management, radioactive waste management and other activities.

The NNSA side of the department functions as a single organization. The ESE side of the Department, thus far, does not. It is comprised of institutional "stovepipes," and speaking candidly, we face a continuing challenge in overcoming the difficulties this presents. For example:

- We have not done as good a job as we should in coordinating the activities of the ESE offices.
- We have not done as good a job as we should in performing the crosscutting analysis we need to justify our budgets to the Congress.
- We have not done as good a job as we should in presenting information to the Secretary and the Deputy Secretary for timely decisions, nor have we consistently had the means to bring the best information to bear in support of those decisions.
- In short, we have not undertaken sustained, strategic management to the degree that we could or should.

I don't mean to sound overly critical of the Department or the fine work it has accomplished. Indeed, the Department has made great strides in many of these areas over the past four years. By one measure, the President's Management Agenda, DOE is one of the top performing and perhaps the most improved agency in the Government.

Having said that, I believe the expectation of everyone in this room today is that DOE can do better. Secretary Bodman has made it abundantly clear to all of us inside the Department that DOE *will* do better.

With the steadfast support of this Committee, the Senate and the Congress as a whole, and with Secretary Bodman's strong leadership, I truly believe the Department is entering a time of remarkable opportunity. I am humbled and enthusiastic about the prospect of being a part of the Department at this exciting time, and I am grateful for the Committee's prompt consideration of my nomination.

I am pleased to answer any questions the Committee may have, either today or in the future.

Thank you, Mr. Chairman.

Senator CRAIG. Well, Dave, thank you very much for those opening comments. You used the phrase several times "we have not done as good a job as we should," and to that I would say yes, yes, and yes again, and I'm pleased to see you being as frank and open as you have been in the realities of what exists in the Department. Yet, at the same time I concur, we have seen substantial improvement there.

Let me hit an issue that is of particular interest to me and then a couple of others. You have heard Senator Murkowski express her concern on a couple of issues, so I'm sure some questions will be coming your way that you can turn around right quickly.

I'm talking about cellulose ethanol commercialization. I use this as an example because I believe it is in part one of those problems in a sense that you've expressed. I believe you're aware that a company called Iogen has developed a technology that enables them to produce ethanol from agricultural wastes such as wheat straw and corn stalks. They've demonstrated their technology in a 50,000 gallon facility that is producing ethanol for sale every day. Now Iogen wants to build, start building commercial scale ethanol plants that will produce up to 50 million gallons of ethanol per year. Those plants would provide as much as $15 to $20 of additional revenue per acre for farmers who are selling them wheat straw or corn straw and create literally hundreds of quality jobs in rural America.

The ethanol from those plants would reduce our dependence on foreign oil and reduce our emissions of greenhouse gases. USDA has estimated that existing residues from farming activities could

support hundreds of such plants and could offset 10 percent or more of our foreign oil consumption.

As you know, Iogen has gotten substantial financial backing from a multinational oil company, Shell Oil, to develop this technology. Despite this, it cannot get a commercial loan for the project because lenders will not go near new technology.

So that's how I use that as an example. Like some others, this technology is trapped in what some might call a technological valley of death, because it can't get the next step, if you will, the time when it has passed research and development phase and is yet not commercially proven. In this valley of death, government grants are useless and commercial loans are out of reach.

How can the U.S. Government step up to commit and accelerate the advent of this or other types of really very credible technologies? That would be one question? And how can we bring this new demonstrated technology, if you will, across the valley of death and into production if it is as good as now it clearly appears it is?

Mr. GARMAN. Thank you for that question. Actually, the U.S. Department of Energy and the U.S. Department of Agriculture jointly have determined that we have a resource of probably 1.3 billion tons of agricultural residues that could constitute a very important new energy source for home-grown energy in the form of cellulosic ethanol. The energy storage value of this cellulosic material is probably in the realm of or equivalent to $20 per barrel oil.

The challenge and the cost is to take that resource from the field, transport it to the location where it can be processed, and the costs of those processing technologies to turn that cellulosic material into a fermentable sugar that can be turned into ethanol liquid fuel.

Iogen, the company you mentioned, I have met with in the past and in fact am meeting with them again, as I recall, next week in my current capacity as Assistant Secretary to better understand how close they are on the technology. It is our belief at the Department, our current belief—and we're open to being proven wrong—but our current belief is that the technologies that exist today are probably only capable of delivering roughly $2 to $2.50 per gallon ethanol.

Now, Iogen may have a breakthrough that we are not aware of and if they are we're very open to exploring with them concepts, and with the Congress. I know you have proposed amendments in another committee to enact a loan guarantee program, and we would like to explore those sorts of opportunities with you.

But we're very open-minded. We share the view that cellulosic material can take us further than corn ethanol can and can make a major contribution in addressing our dependence on foreign petroleum. Automakers from General Motors on are very enthusiastic about the prospects. They didn't used to be, but they are now because they see the potential of 85 percent ethanol blend in vehicles and how that can make a contribution today.

Senator CRAIG. Consistent with that and our concern to become less dependent on foreign sources, Dave, last week energy analysts at Goldman Sachs released a report in which they stated their belief that oil markets may have entered the early stages of what they called a super-spike, a super-spike period that could drive oil prices to over $100 a barrel. The analysts stated that speculative

activity on the part of hedge funds and other non-industry participants have contributed to price volatility, but does not account for any sustained raise in oil prices.

What do you believe are the primary factors that have contributed to the sustained rise in oil prices and what in your opinion can we do to address this problem?

Mr. GARMAN. I think it is becoming clear that the super-major oil companies are not replacing their reserves and that the total global reserves are—or I should say, the additional—we used to be in a mode where production capacity was increasing in the realm of four to five million barrels per day each year. Last year I believe we were only able to add a couple of million barrels to daily production capacity.

This suggests to some that we are potentially entering a period of depletion. The analysts are all over the board on that question. Some have argued that the majors have based exploration and production budgets on historical prices, which are more in the line of $18 to $20 per barrel oil. But Chairman Greenspan suggested yesterday in a speech that E&P production budgets were being reassessed in the majors and that new frontier drilling, new capabilities, were being explored actively.

There's the potential that the western African fields could be coming on line and new capabilities in Baku and in Russia have potential that could force a downward pressure on prices. Also, I thought it was noteworthy that Chairman Greenspan noted that conservation was beginning to take hold. Anecdotally, one only needs to open their newspaper every morning and see the rebates and offers being presented for purchasers of SUV vehicles. They're not moving as well as smaller, fuel efficient vehicles today.

Clearly, conservation and efficiency has a tremendous role to play. I think the fleet of 200 million automobiles on the roads of just U.S. highways alone consume 11 percent of the planet's production right now. So as consumers choose in the face of these higher prices more efficient vehicles, those who can choose to make that choice, that is, we have the capability of bringing some downward pressure on those prices.

But it is a very important consideration and warning shot for us to all take into consideration and why the President's plan is to look at things such as cellulosic ethanol in the short term, ethanol, corn ethanol, in the very short term, and completely new alternatives such as hydrogen in the long term.

Senator CRAIG. Well, let's talk about hydrogen. The President's budget provides $259 million in total funding for hydrogen fuel initiative. Much of the basic research to support the hydrogen initiative is done through the basic energy sciences program within the Office of Science. Basic energy science is funded at $32.5 million in support of the hydrogen fuel initiative. Our current capabilities in hydrogen production and storage are not adequate to the task of establishing a hydrogen economy.

Is the support for basic research in the hydrogen fuel initiative sufficient to generate the breakthroughs that are required or even that allow us to legitimately and publicly talk about hydrogen as an alternative?

Mr. GARMAN. Yes, I believe it is, as long as we're being honest with the American people, as we have been, about the time scales that are involved here. The President said in his 2003 State of the Union Address that a child born today should be able to purchase a hydrogen vehicle when he or she is ready to drive. So we're talking about the 2018, 2020 timeframe before you actually see affordable vehicles in the show room.

There are some, General Motors and Ballard Fuel Cell Company, quite publicly have said, we think we can do it sooner than that. And there are others, of course, that say, no, it's going to take decades and decades for that kind of transition to occur. So the Department and the administration is in the middle of I guess the spectrum of opinion out there.

We believe we have—the President in his $1.2 billion initiative over the first 5 years, it's a very robust budget that is targeted at the largest technical obstacles that confront us. One of the primary, in fact I would say the only, obstacle I believe where we have a true basic research show-stopper to overcome is in the area of hydrogen storage, storing enough hydrogen on board the vehicle. It's probably going to require a new technology or a new material that we currently do not possess, and we will need a technological breakthrough emerging from the basic sciences. That is why over the past 3 years our funding in just the basic science part of the hydrogen program has gone from zero to $29 million to $33 million in that span. We recognize that need.

Senator CRAIG. What, if any, are DOE's plans to schedule and schedule for developing nuclear plant production of hydrogen as a transportation fuel?

Mr. GARMAN. We are looking now at the process. There are several processes that are quite promising as potential hydrogen production from nuclear energy. One of course is high temperature electrolysis, one is conventional electrolysis, the third is thermochemical water splitting using a sulfur iodine or other cycle that requires the high heat of a nuclear reactor or even concentrated solar power as a potential as well.

But we are looking at that process today. We can generate that high heat for other means, through other means, just for the purposes in the laboratory. But we will need over the long term a diverse source of hydrogen from as many different primary energy inputs as possible, and hydrogen from nuclear is one of the things that we think is very, very important for the long term.

Senator CRAIG. As you know, just before the recess Chairman Domenici and I hosted a meeting of nuclear generating utilities, the Secretary, and folks from OMB, and also from Council of Economic Advisers and Wall Street financiers, to demonstrate to this administration not only the desire on the part of the private sector, but the sense of urgency that is growing in the private sector to have a feasible technology for base load development for the out years and the need to plan now and, if you will, pour concrete soon in getting themselves in line for the growth that is coming.

I just came out of California, where I hosted an energy conference on transmission this last—well, on Sunday and Monday. California is growing again. It is recuperating under new leadership. It senses the need to produce energy and facilitate its move-

ment. Yet it's going to need a thousand megawatts of new power a year literally starting now into the foreseeable future if it is to grow as it would like to grow to sustain itself. Of course, the California economy is a significantly big chunk of the U.S. economy and I think all of us recognize that.

In that context, I understand that last week one of the two nuclear consortia finally had their cost-sharing agreement signed by the Department for the Nuclear Power 2010 program.

What do you see as the principal issues facing U.S. generating companies who might wish to build new nuclear plants?

Mr. GARMAN. Regulatory certainty and the ability, the proven ability of the Federal Government to accept the waste are the two things that I think create a pause in investment. I think that the proven ability of modern nuclear plants, what we call Generation 3 Plus plants, to effectively compete in a level playing field look pretty good to investors. But they would like to see regulatory certainty. They would like to—we haven't gone through—we haven't test-driven the new NRC process yet and somebody has to be the first.

NP-2010 is designed to do that. We are also looking at other potential incentives that might need to be in place. Might I say that your leadership and the meeting that you held several weeks ago has created quite a discussion inside the administration and this problem is being looked at very fervently at this very moment.

Senator CRAIG. Well, that leads to my next question, because that was our intent, to create, not a discussion, but action. The President said in February in Germany that he believed building more nuclear power plants in the United States would help the country cut its dangerous dependence on foreign sources of energy. In the context of what we've been asking this morning in questioning, it's increasingly more urgent, if you will.

Do you believe that DOE needs to do more in providing enough support to achieve this objective? And if so, do you have sufficient authority to provide that support?

Mr. GARMAN. I'm sorry, I missed the front part of that question.

Senator CRAIG. Do you believe that DOE needs to do more in providing enough support to achieve the objectives, the objectives of the President, the needs of the industry, the needs of the economy now? And if so, do you have—do you have sufficient authority to provide that support?

Mr. GARMAN. I believe that we do have sufficient authorities. I believe we have the will to act. I don't think I'm betraying any confidences when I state publicly that yesterday there was a cabinet meeting and there were two issues on the President's mind. One of them was energy.

Let me stress that this is an issue that is getting the attention of the President on a daily basis and the President on a daily basis. It is a multifaceted issue, that every aspect of our energy use needs to be looked at and considered. We're talking about baseload electricity for the future growth of California or our continued reliance on foreign oil.

We have the tools. The Congress has provided the Department with a variety of tools over the years in its organic act and other

provisions of law that give us great latitude if we have and are able to develop a bipartisan, bicameral consensus to do it.

I believe that there are provisions in a comprehensive energy bill that would be quite useful to us and that's been under discussion and I know that this committee has been working on it for so hard, for so long and so hard, that you would just like to see it done, and so would we. So the provisions in some of these discussion drafts that have been about and the provisions in the bill that's being talked about between Senator Domenici and Senator Bingaman to try to achieve that consensus are among the new authorities that could be useful to us and as a very important demonstration of bipartisan will to act in the area of energy.

It is very difficult to pass an energy bill and we haven't done it since 1992. Even in 1992, some of the tough issues we decided to forego, tough issues such as new efficiency standards for automobiles and new production from the Arctic National Wildlife Refuge. We punted. So I think we need to take on those issues, help the American people understand that there aren't easy answers or silver bullets in solving our energy problems, and we have to go at it in a multifaceted way.

We need to have the collective political will, not just on the part of the administration, but Democrats and Republicans and independents in the Congress, to come with us to solve these problems.

Senator CRAIG. A couple more comments and questions here and then, David, we can conclude. Let me talk about Yucca Mountain for a moment. I think everyone in the room has read the news accounts of the emails sent between U.S. Geological Survey employees in the late 1990's regarding the water models they were working on at the Yucca project. I'm not going to ask questions about the emails. I understand that the Inspector General of both the Departments of Energy and Interior are conducting investigations on the content of the emails and the potential impact, if any, on the program. We should allow those two offices to do their work and save speculation, I think, for now.

However, last month I asked Secretary Bodman and Deputy Secretary Sell to provide this committee the status update on the Yucca project. Can you please ensure that you will get us this update, that includes the scheduled milestones that are to be completed this year, as soon as possible?

Mr. GARMAN. I will work to do that, yes, sir. Let me say that there is a great deal of uncertainty with regard to the—you know, the Department is dependent on the actions of other agencies and we're—of course, as you know, the courts remanded the radiation release standard to EPA for further rulemaking. We are hopeful that EPA can complete that rulemaking this year, which puts us in the position of making a licensing application shortly thereafter, and we're proceeding with the preparation of that license to the extent we can.

Of course, with these new revelations of potential issues with the emails and quality assurance with the hydrological models, we have to look back at that and ensure that the decisions we've made remain sound.

Let me take this opportunity to characterize what lies before the Department and the Federal Government in making its case to the

Nuclear Regulatory Commission. Some have sort of viewed this process as a speeding train leading to an inevitable conclusion. I think it's something of the opposite. The burden of proof is on the Department before the NRC to prove that public health and safety of a repository, resulting from a repository, would be maintained. That is a stiff burden of proof and we have to ensure that we are ready to make that case to the NRC.

That is the focus of our efforts, and we're working very closely with the Environmental Protection Agency toward that end.

Senator CRAIG. Well, I agree with you it's not a speeding train with a foregone conclusion.

Can you address specifically the shortcomings the NRC identified in the Department's earlier license support network submission?

Mr. GARMAN. I can do that for the record.

Senator CRAIG. Okay.

Mr. GARMAN. Let me just say that this is an unprecedented thing, where you take literally millions of records and pages of material and put it in the public domain for consideration. No one has ever done something like this before. We had millions of documents up on the web available for public scrutiny last summer, and just the time it takes for NRC to go through and catalogue these things through its computer search engine takes months and months.

So this is an unprecedented thing. Nobody's done it before, and any identified shortcomings in the licensing support network we will work hard to correct.

Senator CRAIG. Last, Dave, Secretary Bodman made some comments this week on the NGNP. What can I draw from those? Sounds like he doesn't support it. How can you clarify that for me?

Mr. GARMAN. Sure. Let me try to describe what you saw, both in our budget submission and what Secretary Bodman reportedly said yesterday, I understand, at a speech. The Department of course is trying to do a lot with nuclear energy in a very short time. We inherited a program that I think had been virtually zeroed out around 1997.

Senator CRAIG. That's right.

Mr. GARMAN. And we have been trying to grow that program with, of course, the designation and launching of a new national laboratory in Idaho, with the pursuit of the Nuclear Power 2010 initiative, and with the pursuit of the Generation 4 initiative, with embedded in that the next generation nuclear plant, which we would hope to build in Idaho at the lab some day.

What you saw in our budget and what you see in Secretary Bodman's statement on this subject is that internally in the administration we have not yet made the case to the Office of Management and Budget and the White House that the out year funding requirements for the NGNP are in place. We believe we've made a decision about the technology, the very high temperature gas reactor technology that's appropriate for the purposes, and we believe we know what we want to do and we know where we want to do it. We have to convince the rest of the administration that this is the right thing to do and that we can accommodate these new initiatives inside the budget climate that we're faced with.

So what Secretary Bodman I believe is saying and what I would echo is that, while we can't give you an absolute guarantee about

the time line or pace of construction of the next generation plant in Idaho, that is our intent and our hope and we hope to prevail in those budget deliberations that will come in the out years.

Senator CRAIG. Well, thank you, David. The chairman and I will attempt to assist you in causing that to happen.

I appreciate your forthrightfulness as we deal with these issues and the working relationship we have had and will have and will need to have as we work through what I think the Congress might accomplish this year, a comprehensive energy policy. Certainly the move to get some of our reserves into production as it relates to ANWR, we may have at least hurdled a portion of that general procedural obstacle with the budget resolution.

Last, I do believe if you don't have a sense of urgency or the Secretary doesn't, he ought to get one, and there ought to be a little midnight oil burned in the Department. I didn't get many phone calls from my constituency when gas hit $2 a gallon at the pump. I thought I would, but I didn't. What I did sense and what is happening out there is a tremendous dislocation of energy, of industry, as it relates to high gas prices—hydrocarbons, the petrochemical industry, the fertilizer industry, the input costs of certain components of our industrial base and our economic base, agriculture being one of them. That's under way right now, and a rush to site LNG and a variety of other things are all being moved by this price.

But my guess is if $50 a barrel oil is $2.10 gas at the pump and we get to $100 and that could be $4 gas at the pump—I don't know that you can effectively extrapolate it straight across—my guess is we're going to get more than phone calls. We're going to have the Mall down here full of very angry people, and they should be. And if we're not prepared for that and if this administration and your agency is not prepared to be proactive and responsive in attempting to deal with that and be able to clearly demonstrate it—we're starting to do so, but we'll probably need to accelerate it—then shame on us, because at that point my guess is the American public will have a right to blame someone, because that will have happened because of a failure to shape policy and ultimately build a program that can leverage those prices back down because of production capability.

It's an interesting and important challenge. I hope the analysts at Goldman Sachs are wrong.

Mr. GARMAN. So do I.

Senator CRAIG. At the same time, we have to make the general assumption that we need to get even more busy than we are in trying to change some of those trends by getting this country back into production.

I sensed, as I say, a substantial turnaround in the attitudes in California this past week. You may have been aware of the announcement that we facilitated with the four Governors to do mine mouth production in Wyoming and possibly Montana and to traffic it through a new transmission into northern and southern California and to complete a gridding system in the Pacific Northwest that hopefully will take out some of the bottlenecks that are current in the California and the regional system, that will be most helpful.

That will not come without problems, obviously, and it's going to be awfully important to gain new technologies for clean coal electrical production in those States or there'll be less willingness to allow, if you will, a proliferation of facilities at mine mouth. But I think there's tremendous opportunity there and a willingness by all demonstrations of our meetings in San Diego this week of a willingness to get at the business of doing it.

So that was pleasing, and in many instances, not all, the Department can be of assistance there to be proactive. Obviously, we have Interior and Agriculture and Federal Energy Regulatory Commission involved in certain efforts there that will have to come to play. But it was a positive gesture that a couple of years ago would never have happened. Now I think there's a recognition on the part of everybody that can play in the market and play by shaping policy that we ought to get back at the business of getting our country into production.

So you will play a very valuable role in that with your tenure at the Department, and I look forward to working with you as we do that.

Mr. GARMAN. Thank you, Senator Craig.

Senator CRAIG. Thank you.

Let me say that all additional questions for the record should be submitted to the Chief Counsel by 5 p.m. this afternoon. That way the nominee will be able to respond to them in a timely fashion as we consider his nomination to be moved to the floor.

Again, thank you all very much for your time, and the committee will stand adjourned.

[Whereupon, at 11:07 a.m., the hearing was adjourned.]

APPENDIX

RESPONSES TO ADDITIONAL QUESTIONS

DEPARTMENT OF ENERGY,
CONGRESSIONAL AND INTERGOVERNMENTAL AFFAIRS,
Washington, DC, May 23, 2005.

Hon. PETE V. DOMENICI,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: On March 8, 2005, David Garman, Assistant Secretary for Energy Efficiency and Renewable Energy, testified regarding ways to encourage the diversification of power generation resources.

Enclosed are the answers to nine questions that were submitted by you, Senators Craig and Salazar for the hearing record. The answers to the remaining questions are in the clearing process and will be forwarded to you as soon as possible.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

JILL L. SIGAL,
Acting Assistant Secretary.

[Enclosures.]

QUESTIONS FROM SENATOR DOMENICI

Question 1. Would a Federal credit and trading program create a double subsidy?

Many of the eligible resources under most RPS programs also qualify for the federal production tax credit, which is equal to approximately 1.8 cents per kWh. If we were to adopt a federal RPS with a 1.5 cent per kWh cost cap, dually eligible renewable resources could receive over 3 cents per kWh of subsidies. This is roughly the cost of generating electricity from coal or nuclear plants in many parts of the country. How can this double subsidy be justified and does it best serve consumers?

Answer. The Administration opposes a national renewable portfolio standard and believes that those standards are best left to the States. A national RPS could raise consumer costs, especially in areas where these resources are less abundant. The Administration supports a renewable production tax credit as proposed in the FY 2006 Budget.

Question 2. Will reliability suffer as a result of increasing reliance on generation sources like wind and solar that are intermittent, meaning they may not be available when needed? Will additional natural gas peaking capacity have to be added to deal with this problem?

Answer. Substantial amounts of power from intermittent renewable generation sources can be integrated into electric grid systems with no decrease in reliability, but at some additional cost. The Department has supported several detailed power system studies showing that increasing use of wind generation does impose an additional cost (0.2 to 0.5 cents per kilowatt-hour (kWh) for penetration of ten to fifteen percent) on the utility to assure reliability.

Additional natural gas peaking capacity has not typically been required to increase use of intermittent generation sources. Grid systems operators have the ability to manage intermittent resource technologies to balance the power system and avoid reliability issues.

Question 3. Does impending U.S. reliance on imported LNG have a beneficial effect on renewables, nuclear and domestic coal?

Recently, Cambridge Energy Research Associates' Senior Director of North American Power Larry Makovich said that future LNG supplies in North America are critical in all scenarios for future electric power generation. CERA estimates that power sector needs will cause natural gas market demand to expand between 14%

and 36% by 2020. CERA predicts an increased risk of higher costs, on-going uncertainty surrounding natural gas supply, a drive to bring new sources of gas supply to market and an opportunity for other power generation fuels and technologies-especially coal, renewables and even nuclear-to grow. Do you agree with this analysis?

Answer. The Energy Information Administration (EIA) generally agrees with this analysis. In ETA's recently released 2005 Annual Energy Outlook (AEO2005), natural gas consumption from 2003 to 2020 increases between 30 percent and 42 percent under alternative economic growth assumptions, with a 36 percent increase projected in the reference case. EIA also finds that a large part of the increase in natural gas supplies in all cases will come from increases in liquefied natural gas (LNG) imports. For example, in the reference case, increases in LNG imports between 2003 and 2020 account for 68 percent of the increase in total natural gas supplies. EIA believes that natural gas prices will increase to a point that electricity generation technologies that do not use natural gas, particularly new coal and renewable plants, will be more economically attractive. In the AE02005 reference case, EIA projects that 32 gigawatts of new coal and 7 gigawatts of new renewable capacity will be added by 2020. EIA does not expect new nuclear units to be economically competitive in that time frame in the reference case under current policies, since the relatively high capital costs of nuclear units are projected to outweigh their operating cost advantages. However, we expect that the continued operation and uprating of existing units will be very attractive.

QUESTIONS FROM SENATOR CRAIG

Question 1. Do you see the need for the federal government to take an active role to bring demonstrated technologies—such as Iogen's cellulose ethanol production technology—out of the "valley of death" where they are languishing because commercial lenders will not finance the first-of-a-kind technologies? If so, do you think that loan guarantees could be a useful part of this strategy?

Answer. The successful deployment of demonstrated technology is often the culmination of our research efforts. The Biomass Program is working with commercial lending institutions to determine the additional requirements needed to turn demonstrated technology into financially viable projects. Future cost-shared competitive solicitations aimed at demonstrating the technology to the satisfaction of commercial lenders will be pursued if they are determined to be priority activities that help the program meet its performance targets. Loan guarantee programs will not be successful if their underlying technology is not economically viable. It is not clear that cellulosic plants can yet be viable, even with a federal loan guarantee.

Question 2. Our farmers produce quite a bit of wheat straw, corn stover and barley straw, rice straw and rice hulls as agricultural waste products. United States biotechnology companies are developing enzymes (cellulases) that will convert those waste products to energy and other products. What programs has DOE undertaken to help these companies move these biotech ethanol productions processes forward? What has DOE done to help speed the development of cellulase enzymes to convert wheat straw to bioethanol?

Answer. Our Biomass Program works with the National Renewable Energy Laboratory, which has been an active partner with the two largest enzyme companies who have developed more efficient and cost-effective enzymes to convert the cellulose in agricultural residues to sugars and subsequently to ethanol. The collaboration has resulted in a more than 80 percent reduction in the cost of enzymes per gallon of cellulosic ethanol between 2003 and 2004, resulting in a prestigious R&D 100 Award in 2004. Although these efforts have targeted corn stover, the most abundant agriculture residue nationally, this work can be directly leveraged toward future applications of other agricultural residues such as wheat straw.

Question 3. We have solved many of the technical problems in using biotech enzymes to convert crop residues to bioethanol. The big remaining problem is the cost of constructing commercial scale biorefineries. How is DOE going to help our companies build these first generation biorefineries in the U.S.? What type of loan guarantees or financing mechanisms can DOE provide?

Answer. The program reduces the technical risks by funding core research at the national laboratories and development projects via public/private partnerships to further reduce operational and equipment costs. Such risk reduction and cost improvements help attract investors to fund the construction of the new generation of biorefineries. I do not believe the Department has clear legal authority to provide loan guarantees for this purpose, nor do I believe it is appropriate at this time.

Question 4. The New York Times has reported that Vice President Cheney is supporting clean energy production methods that use enzymes to convert waste products to energy. In the past, President Clinton had signed an Executive Order to

begin a bio-based products and bio-energy initiative. What will the Bush Administration do under your leadership to build on these efforts to help us develop a carbohydrate-based economy?

Answer. The Department continues to fund key areas of research identified in the Biomass Research and Development Act of 2000, which superseded President Clinton's Executive Order. In collaboration with other Federal agencies the Department's Biomass Program funds National Laboratory research and partnerships with industry and universities on projects in support of cost-competitive bio-refineries.

Question 5. The USDA and DOE have been required by the Lugar/Udall legislation to set up a technical Advisory Committee made up of industry people to advise these agencies on advanced biomass conversion technologies. This biomass advisory committee has been in existence for few years. What kind of work product has it produced? Has DOE and USDA implemented the recommendations of this citizen's advisory panel?

Answer. The Biomass Technical Advisory Committee established by the Biomass Research and Development Act of 2000 meets on a quarterly basis and has provided a number of advisory work products to both the Secretary of Energy and the Secretary of Agriculture.

For example, the committee has documented a "vision" for the future of bio-energy and a "roadmap" on how to get there. The committee also provides an annual report that includes technical recommendations based on reviews of our biomass activities. In addition, the committee provides guidance on the conduct and contents of DOE/USDA joint solicitations.

Both DOE and USDA work very closely with the committee and have implemented many of its recommendations.

QUESTIONS FROM SENATOR BUNNING

Question 1. Mr. Garman, the procurement process at the Department of Energy [DOE] has left the community of Paducah and the environmental cleanup program in limbo for over a year. In this particular case, DOE decided to make the procurement a small business award. They announced the procurement and began solicitation in October 2003, and proposals were submitted in the spring of 2004. From that point, it took another 8 months for the DOE to evaluate 4 proposals, and then award a contract to a company in January 2005. Now a protest is delaying the award of the contract even further. It has been a year since DOE received the competitors' offers. The lengthy time period it has taken to award the contract has delayed Paducah Plant clean-up and has jeopardized the accelerated cleanup deadlines.

Given the delay, how long is it going to take to award the Paducah Plant procurement contract in order to minimize the delay in clean-up?

Answer. There were three protests filed against the award of a contract for Paducah Remediation Services, and I am advised that one of those protests has been withdrawn. We will continue to work very closely with the U.S. Government Accountability Office (GAO) and the two remaining companies whose protests remain. The GAO has called a hearing on April 12, 2005, and I am told that the GAO should provide the DOE with a ruling no later than May 11, 2005. The GAO could sustain the protests and require the DOE to go to discussions with the competitive range of bidders or the GAO could rule in favor of DOE and allow contract execution to begin. Until that ruling is provided or another course of action is decided, the cleanup at Paducah will continue under the Bechtel Jacobs contract which has been extended until August 30, 2005.

Question 2. Because of the continuing appeal, is Paducah still on target to meet the accelerated cleanup deadlines?

Answer. Yes. I am informed that we are still on track to meet overall accelerated cleanup deadlines.

QUESTION FROM SENATOR LANDRIEU

Question 1. How do you see the transition of superconductivity from research and development to commercial applications evolving, particularly at a time that our electrical transmission grid demands modernization?

Answer. Over the next few years, I expect to see availability of a new type of superconducting wire (resulting from the Department's program) that will improve the performance/cost characteristics of the power equipment and facilitate the transition to commercial applications. We agree that availability of superconducting power cables and other devices would make an important contribution to the modernization of our electrical transmission grid and are working with equipment manufacturers and electric utilities to develop equipment that will improve reliability

and raise grid capacity. The experience that they are gaining will be invaluable in putting this advanced equipment to use when commercial versions become available.

QUESTIONS FROM SENATOR TALENT

Question 1. What steps has DOE taken with regard to the high price of natural gas, particularly with respect to the expansion of energy-related infrastructure, encouraging the development of liquefied natural gas facilities, and research and development related to new production and exploration technologies?

Answer. The Department has supported the efforts of the Federal Energy Regulatory Commission (FERC) in its delegated responsibilities related to the siting of Liquefied National Gas (LNG) facilities. For example, I have testified in hearings before the Senate and the House, on behalf of the Department and the Administration, advocating for increased LNG importation facilities. We have also undertaken important LNG safety-related research. In addition to these efforts, the Department has undertaken a variety of steps to reduce demand through greater energy efficiency. These steps range from consumer awareness campaigns to achieve near term savings, to research and development on energy efficient appliances and buildings to achieve long term savings.

The Department is proposing, in the President's FY 2006 budget, to close out its natural gas exploration and production R&D work. It is our view that high wellhead prices for natural gas provide industry with both the incentive and the means to undertake this kind of research on its own.

Question 2. Please discuss the relative merits of site-based energy analysis. Are both analyses needed to get a full understanding of any decision affecting energy use or efficiency?

Answer. Site v. source energy issues arise whenever a program or analysis uses a single unit of measure [e.g., British thermal units (Btus)] to represent multiple forms of energy. Btus or other measures of energy are used for a wide range of reasons. Since most forms of energy are, at least in theory, substitutable, Btus (or other common energy measures) are a good way of relating one form of energy use to others.

By converting fuels from their physical units (e.g., gallons, cubic feet or kilowatt hours) to Btus, program managers, users and others can easily compare the relative magnitude of different energy uses (or energy sources) or develop common measures of energy efficiency (e.g., Btus per unit of output). For example, converting fuel oil and natural gas to Btus enables the direct comparison of the home heating requirements of gas-heated homes to oil-heated homes, and also enables the comparison of the energy used for home heating to the energy used in cars. Since the energy used in the production and distribution of oil and natural gas is small relative to the Btu content of the fuel ultimately used, the difference between the end-use energy and full fuel cycle energy content of these energy forms is small and is usually ignored. However, when electricity is added to the mix, the differences between site (end-use) and source (fuel cycle) energy become very significant.

Since the energy content of the fuel used to generate electricity is approximately three times the energy content of electricity at the point of use, converting electricity at the point of use (i.e., 3412 Btus per kilowatt hour) v. the point of generation (usually 10,000 to 11,000 Btus per kilowatt hour) can have a major impact on the apparent significance of electricity demand. Using site energy conversion factors can understate the importance (economic and environmental) of electricity consumption relative to fuels directly consumed. On the other hand, using source energy conversion factors for electricity would appear to overstate the amount of heat energy being released at the point of use.

When electricity is one of several energy forms being evaluated, the conversion method best suited for a particular application—site or source—will vary. In some cases, it may be appropriate to use both, but whenever fuels and electricity are being converted to Btus it is essential that the conversion method used—site or source—be clearly identified and explained.

While using Btus—either site or source—to assess energy supply, use or efficiency can be very useful, it is important to keep in mind that energy policies and programs are usually intended to achieve more specific objectives, such as improving energy security (e.g., by reducing oil imports), reducing life cycle costs (e.g., by minimizing total capital and energy costs) or cutting greenhouse gas emissions (by reducing emissions of carbon dioxide). To determine progress toward these specific objectives, it is essential that energy supply and use also be assessed in terms directly relevant to these objectives (oil content, dollars or carbon-equivalent content of specific energy forms).

Question 3. Please list each program that DOE manages or oversees that relies on site-based or source-based energy analysis and briefly explain why the relied-upon method is more appropriate.

Answer. Fuels, electricity and other forms of energy are regularly converted into Btus in hundreds, if not thousands, of different DOE analyses, data bases, reports and programs. In each case, we do our best to describe why we are using the particular analytical method we have chosen. We would welcome hearing your concern about any analysis, database, report or program that you feel is using an inappropriate method, and would be pleased to consider any suggestions for improvement you might have.

Question 4. Please provide an update on the status of Executive Order 13123, the Greening of the Government, which I understand incorporates source-based energy analysis.

Answer. Executive Order 13123 set the goal of achieving a 35 percent reduction in energy consumption (compared to a 1985 base) by 2010 for Federal standard buildings, laboratories and facilities. Both site and source energy analysis is used. Since the issuance of the order, the Federal Government has achieved a 25.6 percent reduction in energy use for standard buildings compared to the 1985 base.

The order also provided direction for establishing renewable energy and water conservation goals. The renewable energy usage goal calls for 2.5 percent renewable energy usage as a percent of total Federal electricity consumption by 2005. The Federal Government is than 94 percent of the way toward this goal and expect to meet it this year.

QUESTIONS FROM SENATOR MURKOWSKI

Question 1. Please explain how DOE will fund its responsibilities under the Alaska Gas Pipeline legislation during FY05. Please include an explanation of the status of any reprogramming initiative DOE plans to pursue.

Answer. The Office of Fossil Energy is currently evaluating funding requirements to fulfill DOE's responsibilities in this area. We will notify Congress once these needs are fully identified.

Question 2. Please explain how DOE will fund its responsibilities under the Alaska Gas Pipeline legislation in FY06.

Answer. DOE management is committed to carrying out the responsibilities given by the Alaska Natural Gas Pipeline Act in FY06. We will notify Congress once these needs are fully identified.

Question 3. Please provide an overview of the DOE's policies on how the United States can develop its vast methane hydrate resources.

Answer. Industry is currently co-funding, with the DOE, several methane hydrate research and development (R&D) projects. However, the President's FY 06 budget did not seek funding for further oil and gas research given the constraints on discretionary federal spending and the ability of industry to fund its own proprietary R&D in light of high current market prices for hydrocarbons. However, I recognize the higher risk, longer term aspects of methane hydrate R&D, and am mindful of legislation that you have proposed to revitalize our R&D program in this area. Should I be confirmed, I will look forward to working with you and your staff to balance the need for this long term R&D with our need to restrain discretionary spending.

Question 4. Please indicate whether DOE will support the Methane Hydrate Research and Development Reauthorization Act of 2005.

Answer. The Administration's official position on this legislation will be developed in consultation with the White House and other federal agencies. While I cannot guarantee any particular outcome resulting from those deliberations, I personally understand the high risk, long term nature of methane hydrate research and development, and it is my own view that there is an appropriate role for federal involvement in such high risk, long term R&D.

Question 5. Is it the Department's intention to provide continuing funding to the laboratory in the FY 06 budget?

Answer. The President's budget did not request funding for the Arctic Energy Office in FY 2006. As with all other elements of the Office of Fossil Energy Oil and Natural Gas R&D program, the Department is proposing to close out the work in FY06.

Question 6. Last year the University of Alaska Fairbanks, in conjunction with Silverado Green Fuels, perfected a new technique to take high moisture, low-sulfur coal like we have in huge abundance in Alaska at the Beluga field west of Anchorage on Cook Inlet and on the North Slope, and as is found in the Powder River Basin, place it in a pressure vessel to reduce the moisture while keeping the waxes so it can then be remixed with water to produce a highly efficient fuel for boiler/

power plants. Funding is currently being sought to build an actual demonstration plant in Fairbanks, taking coal from the Usibelli mine for testing to prove the economic viability of the fuel process. There is also another project to produce ultra clean diesel fuel and aviation gas for engines from coal. Syntroleum has been working to perfect this process with Usibelli and Alaska Native regional corporation. The process is of great interest to the military because of the fuel's promise of producing low emissions.

What is DOE's willingness to provide funding for coal-related energy research and development in the FY 2006 and future years? Do you have any specific views on funding for these two projects?

Answer. DOE strongly supports funding for coal-related energy research in FY 2006 and future years. With specific regard to coal fuel R&D funding, the President's FY 2006 Clean Coal Fuels budget request of $22,000,000 provides for funding of the coal activities to support the President's Hydrogen Fuel Initiative. The funding will be used to provide (1) advanced technology to produce high purity hydrogen from central station coal gasification plants, and (2) an alternative approach, utilizing high hydrogen content liquid fuels produced from coal-derived synthesis gas that can be reformed to hydrogen adjacent to the end-use. This pathway would utilize the existing liquid fuels infrastructure.

Under this program, in March of this year, the Department competitively selected a proposal from Integrated Concepts and Research Corporation and Syntroleum Corporation to perform R&D directed at producing barrel quantities of Fischer-Tropsch diesel fuel from coal-derived synthesis gas. This fuel will be produced at Syntroleum's Tulsa, OK facilities and up to 6,000 gallons used for vehicle evaluation tests in a coal producing state.

While I was aware of the University of Alaska's interest in low rank coal fuel processes from my tenure as a Senate staff member, I was not aware of the new pressure vessel/remixing process you described or the use of Mr. Usibelli's coal for Fisher-Tropsch liquids. Should I be confirmed, I will look forward to learning more about these two activities.

Question 7. I know of your interest in geothermal energy from your visit, several years ago to Alaska, to inspect potential geothermal sites in the state.

Please explain DOE's perspective on research funding for demonstration projects to perfect geothermal energy projects, either in Alaska or elsewhere in the nation in the near future.

Answer. Our Geothermal Technologies Program (GTP) supports geothermal energy projects throughout the U.S. Our approach is to fund projects that benefit the industry as a whole, provide essential results for long term research, and lead to achievement of our published strategic goals. For example, we recently selected, under a competitive "Electric Power System Validation Solicitation," four different projects to demonstrate innovative technologies to generate electric power using lower temperature geothermal resources. These projects are located in Alaska, Idaho, Nevada, and New Mexico.

QUESTIONS FROM SENATOR SALAZAR

Question 1. Mr. Garman, Colorado experienced significant social and economic turmoil due to the rapid boom and bust cycle of oil shale development in the 1980s. As DOE considers the various oil shale proposals, it is absolutely necessary for DOE and other federal agencies to work closely with Colorado's Department of Natural resources and representatives of local governments, as well as the environmental community, on any plans to develop oil shale. How will you do that?

Answer. The Department of Energy has just begun to reexamine the feasibility of oil shale development as a viable source of domestic liquid fuel production. The Office of Petroleum Reserves, Naval Petroleum and Oil Shale Reserves published a report entitled Strategic Significance of America's Oil Shale Resources in the Spring of last year. That report outlines the attributes of the substantial oil shale resource in Colorado, Utah, and Wyoming and discusses potential commercial development. Among other things the report highlights the need for orderly and coordinated development should investment funds flow into the industry.

Having met with your staff to gain an appreciation of some of the local sensitivities involved, I will work to try to ensure that we pursue an open process which involves local communities and interests should the Federal Government undertake an active role encouraging development of this resource.

Question 2. I also believe that the vast majority of resources needed for oil shale R&D must come from industry and not the Federal government. Precious federal funding must not be diverted from renewable and energy efficiency efforts to focus on oil shale or fossil fuels. Do you agree with my assessment?

Answer. We agree that the resources needed to conduct research and development and ultimately develop the oil shale resources of the country must necessarily come from industry. As we are in the very early planning stages of reexamining the oil shale resource, it is difficult to assess industry interest in research and ultimate commercialization. Currently we have no funding dedicated to oil shale research and development, and do not intend to divert funds from other research for that purpose.

Question 3(a). As you are aware, Mr. Garman, the Rocky Flats project in Colorado continues to be of great interest to the State of Colorado and to your Department. I would like you to reaffirm the commitments by the Department of Energy concerning Rocky Flats to:

Comply fully with state institutional control laws.

Answer. The Department and other federal agencies support States adopting enforceable institutional control laws. These laws can save the taxpayers money and promote transfers of property. The Department and other federal agencies are actively working with States to assure that we can, to the extent legally permissible, comply with applicable state institutional control statutes. With regard to the Colorado statute, we have every intention of establishing institutional controls on the Rocky Flats site that are legally enforceable, run with the land, and are consistent with the requirements of the statute. We are coordinating our efforts with other affected federal agencies.

Question 3(b). As you are aware, Mr. Garman, the Rocky Flats project in Colorado continues to be of great interest to the State of Colorado and to your Department. I would like you to reaffirm the commitments by the Department of Energy concerning Rocky Flats to:

Complete the Department's cleanup mission at Rocky Flats by December 2005.

Answer. I am informed that the Department is on track to meet its commitment to complete the cleanup mission at Rocky Flats in FY 2006.

Question 3(c). As you are aware, Mr. Garman, the Rocky Flats project in Colorado continues to be of great interest to the State of Colorado and to your Department. I would like you to reaffirm the commitments by the Department of Energy concerning Rocky Flats to:

Complete the timely transfer of the land to the National Wildlife Refuge system.

Answer. The Department is working on the transfer of the Rocky Flats National Wildlife Refuge to the U.S. Department of Interior (U.S. Fish & Wildlife Service). The Memorandum of Understanding between the two agencies was published in the *Federal Register* on March 22, 2005, for a 60-day public comment period ending May 21, 2005. The Department will work with the U.S. Department of Interior to resolve the issues regarding the mineral rights under the Refuge, and any other issues that are raised as a result of public comment.

Question 4. Mr. Garman, I want to take this chance to stress my desire to see that the National Renewable Energy Laboratory continues to be a high priority for the Department of Energy. I am very proud of this laboratory and know it holds great promise for our country. I would like your commitment to work to fully fund NREL each budget year.

Answer. As the Assistant Secretary for Efficiency and Renewable Energy, I also have a great deal of pride in the National Renewable Energy Laboratory (NREL), its accomplishments, and its potential. While I cannot offer personal commitments with respect to future Presidential budgets, the Department of Energy has an extensive history of funding many critical research and development activities at NREL, and I have no plans to advocate a change in that approach.

Question 5. If appointed, will your office convene a conference to establish an ongoing, self-sustaining public energy education and information program contemplated by the NEPD Group's recommendation? Could we expect such a meeting this year?

Answer. We have undertaken a great deal of energy education activities in response to the National Energy Policy Development (NEPD) group's recommendation, but I share your view that much more could be done. Through Department of Energy and other agencies, we have supported extensive energy education programs at all levels, in all regions, and in all sectors. Activities include development of instructional materials, websites, field trips, and career education materials. DOE, directly and through the national labs, sponsors higher education, extension programs, and research programs for residential, commercial, agricultural and industrial energy users. Environmental Protection Agency, U.S. Department of Agriculture, and Department of Interior sponsor programs on resource conservation and protection. Federal agencies also work with the energy industry and trade associations to support educational programs on energy efficiency, new technologies, consumer safety, and environmental protection. But I take your point that these efforts could be better coordinated. As you know, the NEPD group recommended that these

efforts be funded on a sustained basis by the energy industry. Should I be confirmed, I will be pleased to convene a meeting of industry and stakeholders to explore how we might undertake a sustained, coordinated energy education effort.

Question 6. Assistant Secretary Garman, reducing electrical transmission losses over long distances would mean an increase in energy efficiency, and could result in significant energy savings. Could you comment on how combining renewable energy sources with a distributed generation system would positively benefit rural areas?

Answer. Distributed generation technologies (microturbines and engines) can operate on renewable fuels such as bio-gas generated from animal waste to produce process heat and electricity for on-farm use. As well, combining renewable energy technologies, such as wind and solar, with distributed generation systems can provide customers with added reliability and environmental benefits. By producing power on site, these technologies can reduce energy costs and electrical system line losses, a particular problem for rural utilities that serve fewer customers-per-mile of distribution line than utilities in higher-density areas.

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