

**THE DEPARTMENT OF ENERGY'S PROPOSED
BUDGET FOR FISCAL YEAR 2001**

HEARING
BEFORE THE
SUBCOMMITTEE ON ENERGY AND POWER
OF THE
COMMITTEE ON COMMERCE
HOUSE OF REPRESENTATIVES
ONE HUNDRED SIXTH CONGRESS
SECOND SESSION

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THE DEPARTMENT OF ENERGY'S PROPOSED BUDGET FOR FISCAL YEAR 2001

FRIDAY, MARCH 24, 2000

HOUSE OF REPRESENTATIVES,
COMMITTEE ON COMMERCE,
SUBCOMMITTEE ON ENERGY AND POWER,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2322, Rayburn House Office Building, Hon. Joe Barton (chairman) presiding.

Members present: Representatives Barton, Burr, Whitfield, Norwood, Markey, and Strickland.

Staff present: Kevin Cook, science advisor; Miriam Swydan Erickson, majority counsel; Elizabeth Brennan, legislative clerk; Sue Sheridan, minority counsel; and Rick Kessler, professional staff member.

Mr. BARTON. The Energy and Power Subcommittee on the hearing of the Department of Energy's budget, fiscal year 2001 is ready to begin. I guess this is appropriate since we passed the budget last night, or in the morning, actually, about 12:15 but we are at least holding the hearing on the same day.

We have recently held a hearing on the dramatic increase in the price of crude oil and petroleum products. We did that several weeks ago. We heard testimony on the multiple causes for the increase, whether the Department of Energy had adequately forecasted the increase and how to help homeowners pay their home heating oil bills. Today we should remember that the Department of Energy has responsibility for administering all of the U.S. energy policy. I believe the most important energy issue facing the United States today is the advancement of electricity restructuring which this subcommittee has passed legislation on back in October. I know that bringing full competition to the electric sector is a priority for the committee. It is good for consumers, and that is what is important to me and to this subcommittee. I hope we can all work together today and next week in the next month, several months, to enact a comprehensive electric restructuring program.

Today we are going to examine the Department of Energy's original mission to promote all energy security. Over the years, the department's focus has shifted to environmental management and national security. Only 12 percent, or \$2.2 billion is spent on energy resources of the department's budgets today. I will let everybody know why I am laughing here in a minute.

This reverses the trend of the last 2 years when the agency's budget request was declining. This hearing should provide mem-

bers an opportunity to voice any concerns they may have about the department's shift in focus in funding. I look forward to hearing the testimony of the distinguished deputy secretary. And we will continue with the hearing.

Does Mr. Norwood wish to make an opening statement?

Mr. NORWOOD. Yes, sir.

Mr. BARTON. The Chair would recognize you pending the arrival of Mr. Strickland.

Mr. NORWOOD. Thank you, Mr. Chairman. I want you to know that—I will wait until he is listening.

Mr. BARTON. I am listening.

Mr. NORWOOD. I just want to point out to you that in Georgia this morning the dogwoods are in bloom, the azaleas are wide open, there is honeysuckle in the air and with that, I would like to thank you so much for holding this hearing this morning.

Mr. BARTON. Well, now would the gentleman yield?

Mr. NORWOOD. Of course.

Mr. BARTON. The gentleman knows that we were here until 12:15 this morning, so unless the gentleman from Georgia got up at the crack of dawn and caught the 6 a.m. flight to Atlanta and then drove for several hours, he wouldn't be smelling the honeysuckle or seeing the sunrise over—

Mr. NORWOOD. I would be there right now. But in all seriousness—I am kidding. I am pleased that you are having this hearing today on the Department of Energy's budget proposal for the fiscal year 2001. It gives me an opportunity to make a couple of points. As you know, my district is contiguous to the Savannah River site, the most impressive field site in the DOE complex. Roughly, 8,000 of my constituents currently work at this site, which has been a vital part of our community since World War II. And we consider them as co warriors.

I spent my first few years in Congress fighting the layoffs that were inevitable as a result of the end of the cold war. And I now want to make absolutely sure that our site is not only properly equipped to clean up after 40 years of serving the country from the defense buildup, but also is prepared to take on any new missions that it might be qualified to handle.

I am pleased to see that the DOE's environmental management budget for fiscal year 2001 looks good. I would like to reiterate the concerns, Mr. Secretary, that I have repeatedly and repeatedly expressed about the department's selection of a commercial plant at the Tennessee Valley Authority for the proposed tritium production facility. I have it on good source that the Vice President doesn't like all these activities, and he certainly probably really doesn't want it in Tennessee. We have always maintained, and I will say it again here today, the production of tritium for use in nuclear weapons is too sensitive of an issue to risk leaving it in the hands of a commercial plant. This is not a matter of my protecting my turf or bringing missions home. This is a matter, in our view, of national security.

Simply stated, the people at the Savannah River site have the expertise, they have the secure infrastructure to do this. We have the safety record to ensure that the production of tritium is carried out in a safe and secure manner. And I would urge you to urge—

in fact, Vice President Gore and I would urge you to urge the Secretary to rethink his decision in this matter.

My other concerns today involve around the ongoing saga of the Clinton's administration unwillingness to accept this responsibility to deal with our country's spent fuel problem. I said on the floor yesterday that I am deeply, deeply concerned that the President is playing political games with a very dangerous issue. We need to come, we need to come to some resolution on what we are going to do with the tons of nuclear waste, much of which is in my backyard, that is, accumulating at 72 sites around this Nation.

I know that Secretary Richardson has considerable influence with the President on this issue. I also know that the Secretary realizes the need for urgency. And I want to urge you to urge Mr. Richardson to put partisan politics aside on this and do what he knows in his heart is the right thing to do for this country.

Mr. Chairman, with that, I will button up and yield back the balance of my time.

Mr. BARTON. Well, you just missed one flight to Georgia due to the length of that opening statement. The Chair has a confession to make. I rushed in here to start the hearing close to on time and managed to read the statement of Tom Bliley as my opening statement. So I was about two-thirds of the way through it before the staff managed to convey to me that it was not my opening statement, it was Chairman's Bliley's.

Mr. NORWOOD. Come on, Mr. Chairman, read us yours.

Mr. BARTON. No, I will submit my statement for the record.

[The prepared statement of Hon. Joe Barton follows:]

PREPARED STATEMENT OF HON. JOE BARTON, CHAIRMAN, SUBCOMMITTEE ON ENERGY AND POWER

We are here today to examine the Department of Energy's budget request for Fiscal Year 2001. This budget hearing is not just about how much money the Department wants to spend next year, but also about understanding the policies behind the numbers.

The Department has submitted an ambitious proposal, seeking a total of \$18.9 billion for FY2001. This represents an increase of over nine percent from the comparable appropriations for the current fiscal year. The Department needs to justify to us the reason for this substantial increase. We also need to find out whether DOE is adhering to our previous guidance and is making progress on a number of energy issues that are of particular importance to the Members of this Subcommittee.

At this same hearing last year, I said that nuclear waste was at the top of my priority list. It still is at the top of my list, sharing that spot with electricity restructuring. If anything, my frustration with the Department on the nuclear waste issue has grown even stronger. Although I disagreed with the Senate bill that came before the House earlier this week, the final vote shows that a substantial majority of Members in both chambers support the partial solution to nuclear waste provided in Senate bill 1287. Members from both sides of the aisle made a sincere attempt to solve this national problem, and all this Administration would contribute to the debate was one more irresponsible veto threat.

Secretary Richardson testified to this Subcommittee last year that the permanent repository program, even without additional features such as interim storage or take title, faces a serious funding shortfall in the coming fiscal years. The program needs over \$10 billion for the repository between now and 2010, but will be lucky to receive even half of that amount under the current funding scheme. We offered a solution to that problem by using the money that the ratepayers have already paid in to the Nuclear Waste Fund—and, again, all we heard from the Administration was another veto threat.

I keep looking for this Administration to offer its own constructive solution to the funding problem, but the 2001 budget request continues to ignore the situation. It is time for the Department to be honest with the Congress and the American people

about this situation—without a major change in how the nuclear waste program is funded, the permanent repository will not open in 2010.

Meanwhile, spent fuel continues to accumulate at reactor sites around the country, and the financial liability against the Federal government grows larger every day. And we have before us another DOE budget request that addresses only the next fiscal year, conveniently ignoring the disaster looming around the corner. I guess Yogi Berra must have had nuclear waste in mind when he talked about this being “deja vu all over again.”

I have several other serious matters to discuss with the Department, starting with the Department’s obvious lack of success in forecasting the recent fluctuations in oil prices. I welcome any comments from the witness concerning improvements the Department is contemplating to this vital forecasting role.

I was very disappointed that Secretary Richardson discouraged a bipartisan delegation of Commerce Committee Members from going to Vienna for next Monday’s meeting of OPEC countries. I question both the wisdom and intent of asking our Members, who have many different views on domestic energy policy, to not attend this important meeting and represent the United States Congress.

As you know by now, this Subcommittee is very concerned about the implementation of the new National Nuclear Security Administration and whether this new organization will really solve the safety and security problems facing the Department. I also have concerns about the major expansion of research and development work on climate change. While I am supportive of more R&D on climate change and have introduced legislation to that end, we all need to make sure that the Department is not getting out ahead of the Kyoto Protocol.

The DOE also requests \$450 million to start the Hanford privatization contract, an effort which will take 20 years to complete and require more than \$500 million per year. Unfortunately, DOE has not demonstrated any credible track record with other privatization projects, such as the failed Pit 9 effort that the Committee revealed in 1997. DOE must get on with the cleanup at Hanford, but the Department has not demonstrated that the proposed Hanford privatization contract offers the best value to the US Government.

We can address these matters in more detail during the question-and-answer period. I welcome Mr. Glauthier before the Committee and look forward to your testimony.

Mr. BARTON. I wouldn’t put the Secretary through that. But I do have a very good opening statement. The Chair would recognize the distinguished gentleman from Ohio for an opening statement.

Mr. STRICKLAND. Thank you, Mr. Chairman. My opening statement will not be long, and I am anxiously awaiting a time when we can direct questions to our guest this morning. Mr. Deputy Secretary, I want to thank you for coming and I want to thank you, and I especially want to thank Secretary Richardson for the obvious concern that he has shown to me and to my constituents. Later on, I will have questions for you. I have read your testimony. But I just want to say for the record, I think it is important for me to say that I have been deeply, deeply disappointed with some of the actions of the department. In my district we are facing a crisis situation, but I think it is going beyond my district.

I think it involves my colleague from Kentucky’s district, and I think it involves this Nation’s economic security, and it involves this Nation’s national security. We privatize this vital industry, the uranium enrichment industry. Jobs have been lost as a result, 250 jobs at my plant last year, 250 at my colleague’s plant and 825 to 850 jobs will be lost between the two plants in July of this year. Some of the same Wall Streeters who advocated and pushed for the privatization of this industry are now advocating for the closure of one of our two plants. These are very, very serious circumstances. I think we have a uranium enrichment corporation now that is worth more dead than alive. And I worry about the potential of this domestic industry being so decimated that we will find ourselves without a reliable supply of domestic energy, domestic fuel for our

nuclear power plants, thereby making us ever increasingly more reliant upon foreign sources for our national energy needs. And so I welcome you here. I look forward to your testimony. And I look forward to an opportunity to direct some questions to you. Thank you very much.

Mr. BARTON. Thank you, Congressman Strickland.
Congressman Whitfield, for an opening statement.

Mr. WHITFIELD. Thank you, Mr. Chairman. And once again we are always impressed with how organized you are.

Mr. BARTON. At least I am honest.

Mr. WHITFIELD. And I just would like to echo Mr. Strickland's remarks because we do have some common challenges facing us, Mr. Glauthier, and I am glad you are here today. I would say that there will obviously be additional hearings on the United States Enrichment Corporation and its impact on enrichment of uranium as a guaranteed source for domestic production.

I do have a number of questions which we will get to, but I would like to thank Secretary Richardson for, I think, responding in an admirable way to many of the questions raised by The Washington Post which has been running repeated articles about these gaseous diffusion plants. I will say that the overall amount of \$109 million in this year's budget request is nearly double what you proposed in the past. And that is going to be for cleanup activities, \$78 million, \$23.9 million for uranium hexafluoride conversion, \$4.3 million for environmental health and safety studies and medical monitoring, which is vitally important, and \$3 million for worker transition programs. But I know Mr. Strickland and I both have some other very serious concerns, and so we are delighted you are here today and look forward to talking to you as we go along.

Mr. BARTON. Thank the gentleman from Kentucky. The gentleman from North Carolina.

Mr. BURR. Thank you, Mr. Chairman. Clearly, I am not as organized as you are, so I would ask unanimous consent to give your opening statement.

Mr. BARTON. I will hand it down there.

Mr. BURR. In that would be in order. Let me welcome Department of Energy and apologize for my casual clothes, but this is travel day. And that is probably a good sign for you that I do have a flight. Let me just say that having an opportunity to read two different testimonies because of the delay of this hearing, I was glad to see that there were some things that were added that specifically address the secretary's negotiations with OPEC and other items that I think are pertinent to at least our current crisis.

Given that we are looking at an annual budget, I expected to see more specifics about domestic policy, production policy and initiatives that the department wanted to see implemented in that budget year. I am hopeful that as you answer questions and expound on your testimony, that, in, fact we will hear some of the specifics that I didn't find in the written testimony.

I will say that for many members on this committee, I was delighted to see that we have similar hopes of electricity deregulation sooner rather than later. And we will look for every opportunity to explore everything that has happened at the Department of Energy

to reach some conclusion on deregulation. And with that, I thank you once again and I yield back, Mr. Chairman.

Mr. BARTON. Thank you. Before we recognize the Secretary for such time as he may consume, I want to just briefly summarize what my lengthy opening statement says. We have three concerns. No. 1, you have got a substantial increase in your budget request this year. And I think the committee needs to have some justification for a 9 percent increase. Number 2, the nuclear waste policy of the Department of Energy continues to be a mystery. It is going to cost \$10 billion to build a depository and have it operational by the year 2010, and the department insists on continuing to fund requests in the \$400 million-per-year range. I think you are up \$37 million. It just doesn't work. You know that I know that. We don't need veto threats, we need cooperation between the executive branch and the legislative branch to find a solution. And then on the energy, the oil policy problem that we are having, the higher oil and gasoline prices, the department quite frankly has been asleep at the switch. Congressman Markey pointed out several weeks ago that the Energy Information Agency, which is a semi-autonomous part of DOE was projecting as early as last June and officially with retail price projections in October of this past year what really happened. And the department really did nothing to even begin to address the problem until December and January. So we will have some questions on that.

And in trying to cooperate, this subcommittee requested to go to OPEC this weekend, take a bipartisan congressional delegation. The State Deputy strongly discouraged it. Secretary Richardson initially seemed to be open to it in a phone conversation but his official letter opposed it. When I had to inform the minority of that, they felt, rightfully so, that if the administration wasn't participating we shouldn't participate so we didn't.

So as far as I know, there is going to be no U.S. present at OPEC at all this weekend and early next week. Given the sensitivity of their decisions it would have seemed appropriate to me to take a bipartisan delegation and observe the discussions and perhaps encourage them to make some decisions that I know the Republicans and Democrats in the Congress and in the executive branch support. So those would have been my statements elaborated if he had given a lengthy statement. I will put that into the record.

[Additional statements submitted for the record follow:]

PREPARED STATEMENT OF HON. TOM BLILEY, CHAIRMAN, COMMITTEE ON COMMERCE

This morning, the Subcommittee on Energy and Power will examine the Department of Energy's budget request for Fiscal Year 2001.

Recently we held a hearing on the dramatic increase in the price of crude oil and petroleum products. We heard testimony on the multiple causes for the increase, whether DOE adequately forecasted the increase, and how to help homeowners pay their home heating oil bills.

Today, we should remember that DOE has responsibility for administering U.S. energy policies. I believe the most important energy issue facing the U.S. today is the advancement of electric restructuring legislation. I know bringing competition to the electric sector is a priority for this Committee. It is good for consumers and that is what is important to me. I hope that we can all work together to enact comprehensive legislation in the 106th Congress that will benefit all consumers.

Today we examine DOE's original mission—to promote energy security. Over the years, DOE's focus has shifted to environmental management and national security. That is why only 12 percent, or \$2.2 billion is spent on energy resources. But more

importantly, this year DOE requested a 9 percent increase of almost \$1.6 billion. This reverses the trend of the last two years when the agency's budget request was declining. This hearing provides Members of this committee with an opportunity to voice any concerns they may have about DOE's shift in focus and in funding.

I look forward to the Department's testimony, and thank Mr. Barton for this hearing.

PREPARED STATEMENT OF HON. EDWARD J. MARKEY, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF MASSACHUSETTS

Thank you, Mr. Chairman. I want to begin by commending you for calling today's hearing.

As I consider the energy agenda reflected in the Administration's Budget Request, I am struck by the transformation that has taken place since the early years after I first arrived in Washington. Back then, we had price controls on oil and natural gas—controls which had been in place since the Nixon Administration and which established at least 32 different prices for natural gas and 7 tiers of oil prices. Oil prices were beginning to spike upward from \$13 towards a peak of over \$37 a barrel. Consumers were about to resume facing gas lines at the pump. We were supposedly running out of natural gas and therefore had to pass a Fuel Use Act barring it from being used for electricity generation. President Carter was calling for a massive multi-billion dollar government investment in synfuels, which he claimed, was essential to meeting our future energy needs. Energy Secretary James Schlesinger was telling us that if we didn't build 1000 nuclear powerplants we would be facing blackouts and brownouts across the country. We were going to strip oil from shale in a corner of Colorado that would, in light of the relevant impact upon the environment, be designated a "National Sacrifice Zone." New cars consumed an average of 12 miles per gallon, and Detroit was telling us they just couldn't make them any more energy efficient than the Model A Ford my Dad bought back during the Depression.

Today so much has changed. The concept of oil and gas price controls now seems as distant and dated as polyester leisure suits and avocado green refrigerators. The Carter-era synfuels program that was supposed to lead us out of the world of ever higher oil prices actually had nothing to do with today's lower prices. In fact, the program is long dead, buried, and largely forgotten. Colorado survived. Moreover, today, we are awash in cheap natural gas—with pipelines coming down from off the coast of Nova Scotia that will transform our energy marketplace in New England. We haven't ordered a single new nuclear powerplant since 1973, but we have met our electricity needs with alternative fuels and by becoming more energy efficient. Today, new cars consume an average of 27 miles per gallon (although Detroit is still telling us they just can't make them any more energy efficient)!

But, we are again facing an upward spike in oil prices. And while many observers believe that the current high prices are likely to be shorter in duration and severity than the huge oil shocks we experienced back in the Seventies, these increased prices have put increased focus on the importance the Department's activities play in crafting a national energy policy. The Administration's DOE budget request seeks to put our nation in a position where the American people are protected from energy price shocks while having access to the energy and fuel they need. And the budget request does this not by hurting the environment, but by increasing our energy efficiency and diversing our fuel supply base. For example, the President and the Vice President have proposed a budget that includes over \$1 billion next year to accelerate the research, development, and deployment of alternative and more efficient energy technologies, as well as \$4.0 billion in tax incentives over five years to benefit our energy-reliant consumers and businesses.

These are the kinds of tax cuts that would make a real difference in our energy future, and will save consumers more money in the long run than a small break on the gas tax. Unfortunately, the House yesterday passed a Republican budget resolution that failed to make any mention of these common sense tax credits. In addition, the Administration's budget request includes a proposed \$275 million in R&D efforts next year to make offices, homes, and appliances 50% more energy efficient within a decade. People understand what that means for their home heating bill. Overall, meeting this goal would save consumers \$11 billion a year in energy costs. Here, the House Republican budget resolution proposed to slash overall Energy Research funding by \$200 million below last year's funding level.

The Administration has also proposed to expand DOE's *Weatherization Assistance Program* that helps low-income households make their homes more energy efficient. These are the Americans that most need to reduce monthly energy costs. *This pro-*

gram has already weatherized almost 5 million low-income homes and is saving 3.0 million barrels of oil each year. With funding from DOE and the states, our nation could add more than 150,000 homes to the list in the next year—which will save more than an additional 91,000 barrels of oil per year. The Administration's budget request seeks \$154 million for FY 2001 and an additional \$19 million for the current year in the FY 2000 supplemental spending bill. Here again, the House Republican Budget resolution is silent. And in past years, Democrats have had to fight hard to prevent cuts in this important program.

Earlier this week, the House considered a bill that the House Republican Leadership dubbed the "Oil Price Reduction Act"—a case of misleading advertising if I ever saw one. Rejecting Democratic efforts to reauthorize the President's authority to deploy the Strategic Petroleum Reserve (which expires at the end of next week), create a regional home heating oil reserve (as the President proposed last week), or to adopt the Administration's package of energy production, renewables, and efficiency tax credits, the Republicans instead passed a meaningless do-nothing bill. All it says is that we should take into account oil-price fixing by OPEC member nations in our overall political, economic and military relations with these nations—as if we didn't already do so today! The bill calls for a report by the President on any OPEC price fixing, and on the nature of existing military assistance or arms sales from the U.S. to these nations. However, the Rules Committee dropped the only meaningful provision from the bill—an authorization for the President to cut off arms sales or military assistance to OPEC nations that engage in oil price fixing.

And so, I can only hope that this do-nothing bill is not the final chapter in this years' legislative activities on energy. We need to reauthorize the Energy Policy and Conservation Act—EPCA—that gives the President authority to deploy the Strategic Petroleum Reserve. It is unconscionable that this Congress would let EPCA lapse just as OPEC's oil ministers are about to meet in Vienna. In addition, we should amend the Markey-Lent-Moorhead amendment to EPCA to grant a specific authorization to the President to create a regional refined product reserve in the Northeast. Finally, we should approve the Administration's budget request for the Department of Energy—which offers a package of medium and long-term solutions to our dependence on imported oil.

Thank you again, Mr. Chairman, for calling today's hearing. I look forward to hearing the testimony.

Mr. BARTON. We are glad to have you, Mr. Deputy Secretary. You have been before this committee and subcommittee several times. We are going to recognize you for such time as you may consume then we will have some questions for you. Mr. Secretary.

**STATEMENT OF HON. T.J. GLAUCHIER, DEPUTY SECRETARY
OF ENERGY, U.S. DEPARTMENT OF ENERGY**

Mr. GLAUCHIER. Thank you, Mr. Chairman, and members. I will summarize my statement because you do have copies of it. I want to thank you for the opportunity to be here to discuss the budget. Before I start on specifics of the budget, I want to comment on some of the management reforms that we have been working on at the department. These are areas which Secretary Richardson and I both feel deserve top priority. And we have put a lot of attention into them. And I would like to just highlight a couple of them.

First and most important, we have really changed the way the headquarters and field operations of the department interrelate. We have simplified the reporting lines and we have clarified the relationship of line and staff offices within the department. We have tried to put in place a clear chain of command from the program officers at headquarters to the field offices, to the actual sites, the laboratories or production plants or other facilities in the field so that there is a clear responsibility and authority for actions and for programs and policies and an accountability that has been lacking all too long.

We have also done some other things. We established and staffed an office of engineering and construction management within our Office of Chief Financial Officer to make fundamental changes in the way the project management is carried on at the department. So much of our work does include very large expenditures on big projects. We need to have the best discipline and the best practices in that area. We have staffed it with people who bring experience from other departments and other programs to give us that expertise.

In this last year, we have also initiated several immediate actions concerning security and counterintelligence. As you know, those have gotten a lot of attention in the last year. We feel we have made substantial progress on an extensive program there, and have done things such as creating the Office of Security and Emergency Operations, which consolidates the security functions throughout the department. We have instituted a bottom up internal security review and we have created the Office of Independent Oversight and Performance Assurance, which independently oversees security, cyber security and emergency management programs and reports directly to the Secretary.

Also last year, we launched a "Work Force for the 21st Century Initiative" to build a talented and diverse work force which will strengthen our technical and management capabilities and address new challenges, including addressing the long-standing underrepresentation of women and minorities in senior management management and technical positions.

On another front under the direction of Under Secretary Ernest Moniz, we also established a clearly defined and well articulated departmental R&D portfolio. This will ensure our R&D programs are properly structured and take advantage of interrelationships with all of the relevant program areas.

And last in this management area, the department's defense mission is being restructured into the National Nuclear Security Administration. We established the NNSA as required on March 1st. We transferred 2000 Federal employees and over 37,000 contractor employees into this new organization. The President has indicated he will nominate General John Gordon to head this organization, and he has nominated Madelyn Creedon to be the Deputy Administrator for defense programs. We are committed to making the NNSA a viable effective organization. The fiscal year 2001 budget for this NNSA will total \$6.2 billion, an increase of over \$400 million above this year's level.

We have made progress in many areas, but we are far from finished. We'll continue to improve the department's internal management capabilities to realize the full potential which our work force and facilities hold for America. This budget will help us go further. It is a forward looking request, emphasizing investments for the future.

I would like to mention a couple of successes this year before moving on to the requests for the next year. In our four mission areas, first, in the science area the department's funded researchers have received 43 of the 100 awards given last year by the R&D magazine for outstanding technology developments with commer-

cial potential. This is the largest number ever won by any public or private entity in the history of the awards.

In the national security area, the Departments of Energy and Defense have certified for the third consecutive year the safety, security and reliability of our Nation's nuclear weapons stockpile without nuclear testing. And we are meeting critical mission objectives, including new production environments for the W76, W80 and W88 warheads, for refurbishment of the W-87 Peacekeeper warheads and successful accomplishment of subcritical experiments, including initiation of production of tritium reservoirs at the Kansas City Plant and reestablishment of pit production capability at Los Alamos.

In the energy resources area we have proposed legislation, as noted earlier, to restructure the electric utility industry, give consumer choices, save them \$20 billion a year on their power bills. And we hope that we will be able to continue to work with you in the Congress to get this legislation passed this year.

We promoted new technologies for clean and renewable energy. We have worked with the utilities and the oil and gas industry to make all of our systems Y2K compliant. And on January 1, the lights stayed on. We are responding to the current oil supply problems through a range of measures from the Secretary's diplomatic initiatives with major oil producing countries, both within and outside OPEC, to the reestablishment of an energy emergency office within the department, extensive consultation and coordination with energy suppliers and State and local government officials, renegotiation of the Strategic Petroleum Reserve royalty in kind deliveries to keep more oil in the market. And last Saturday, the President announced the administration's intention to create a northeast heating oil reserve. The department is working to expedite this decision.

We would ask you to help us get reauthorization of the Strategic Petroleum Reserve, which legislation expires at the end of this month.

In the environment area after years of delay and excuses, we did finally open the waste isolation pilot plant in New Mexico, the Nation's first nuclear waste repository. We have successfully completed 44 shipments to WIPP to date, and on March 10th, resumed shipments from the Rocky Flats site in Colorado after successfully completing additional waste certification requirements.

We formed partnerships with Governors to clean up and close former nuclear weapons production sites and have set aside over 300,000 acres—acres as wildlife preserves in Washington, Colorado, Tennessee, South Carolina, Idaho and New Mexico.

For the 2001 budget, we have given the budget the theme "strength through science." Science is the focus because scientific research, both basic and applied, is integral to achieving our programmatic objectives in each of our mission areas. This department is among the top Federal research and development funding agencies, regardless of the criteria used. We are first in scientific facilities and rank third in basic research funding after the National Institutes of Health and the National Science Foundation. The Department of Energy is, at its heart, a science agency. In fact, 40 percent of our fiscal 2001 budget qualifies as R&D expenditures.

We will spend a total of \$7.1 billion on R&D in fiscal 2000 and plan to spend \$7.7 billion in 2001, an increase of 8 percent.

The department's 2001 budget request total is \$18.9 billion. That is \$1.6 billion over this year's appropriation, a 9 percent increase as you indicated in your opening comments. Our budget is organized into four business areas. Let me mention each one of them briefly. First, energy resources, which is the request of \$2.2 billion, an increase of \$175 million over this year's level or 8 percent, to provide energy options for a stronger America. These investments will enhance U.S. energy security by providing more economical and environmentally desirable ways to use and produce energy. DOE continues to support a balanced portfolio of energy for America's future and research and development to enable a cleaner energy future.

The request features several cross-cutting initiatives involving energy technology research offices. The climate change technology initiative and the international clean energy initiative will identify and develop precommercial energy technologies and potential markets for their use. The electric grid reliability initiative will develop policies and technologies to enhance the security of our electricity supplies. The enhanced ultra clean transportation fuels initiative targets government and industry resources to develop a portfolio of advanced petroleum-based highway transportation fuels and fuels utilization technologies that are responsive to near and midterm environmental regulatory and technical challenges.

Finally, the bioenergy, bioproducts initiative will fund research to help make biomass a viable competitor as an energy source or chemical feedstock.

The fossil energy research and development program level of \$385 million includes funding for the upgraded National Energy Technology Laboratory for Fossil Fuels Research. This budget continues investments in advanced technological concepts and development of highly efficient power generation and fuel producing technologies that together do could reduce, or perhaps nearly eliminate carbon emissions from fossil fuel facilities, the centerpieces of this research including the Vision 21 energy plant of the future and carbon sequestration.

The proposed deferral of \$221 million in clean coal technology program reflects scheduled delays from the rescheduling of certain projects. The department believes the clean coal program is important and we anticipate successfully completing all of the ongoing projects. Funding for the Office of Energy Efficiency and Renewable Energy includes support for the research to assist in the development of more efficient homes and buildings, wind energy, geothermal, photovoltaics, and bioenergy and biopowered projects. Research will also continue in the ongoing partnership for new generation of vehicles which is developing the prototype advanced technology vehicle in conjunction with the auto industry. The we are asking \$1.3 billion for these programs in fiscal 2001, an increase of 18 percent.

It includes the weatherization assistance program, which helps to reduce heating and cooling bills for low income residents which itself has an increased budget request for 2001 to weatherize approximately 77,000 homes.

The budget for the Office of Nuclear Energy Science and Technology has an increase of \$21 million to support such important activities as nuclear energy research and development including the expanded nuclear energy research initiative and managing the inventory of depleted uranium hexafluoride. This office also conducts a program to produce and distribute isotopes necessary for medical, industrial and research purposes, including the advanced nuclear medicine initiative.

The power marketing administrations sell electricity primarily generated by hydropower projects located at Federal dams. First preference for the sale of power is given to public bodies and cooperatives. This budget assumes that in fiscal 2001, the power marketing administrations will use offsetting collections from the sale of electricity to finance purchased power and wheeling expenses that were previously funded by direct appropriations.

In the science and technology mission area, we are asking for a total of \$3.2 billion, an increase of \$337 million or 12 percent. This should provide the knowledge base for future innovation thereby improving America's long-term position in an increasingly competitive world economy. We continue to promote a strong national scientific infrastructure, provide the technical foundations for our applied missions. The fiscal 2001 budget includes initiatives to advance ongoing work at the frontiers of nanoscience, scientific computing, microbial genomics, robotics, bioengineering and will allow us to increase the use of our scientific facilities.

This budget continues to strongly support the department's unique scientific user facilities. Each year over 15,000 university industry and government sponsored scientists conduct cutting edge experiments at these particle accelerators, high-flux neutron sources, synchrotron radiation light sources and other specialized facilities.

In the environmental quality mission area, we are asking for a total of \$6.8 million, an increase of \$511 million, or 8 percent, to protect the environment and our workers. These amounts are required to ensure that each cleanup site meets safety and legal requirements, supports accelerated cleanup and site closure and maintains other critical environmental priorities.

Our 2001 request continues an aggressive approach to address immediate and long-term environmental and health risks of the weapon complex. Let me cite a couple of examples. I mentioned earlier that we have opened the WIPP facility in New Mexico and completed 44 shipments there. We are accelerating the schedule of shipments this year and next year in next year's budget in order to continue to support the movement of waste from our other sites. One of those sites is Rocky Flats, where a budget request of \$665 million in the fiscal 2000 budget will support closure by December of 2006. This is based on new cost-plus incentive fee contract that took effect February 1 this year. The Rocky Flats site is the largest site challenge to accelerate cleanup and achieve closure in 2006. And to date, significant progress has been made toward making this goal a reality.

Another of our efforts is to protect the Columbia River by beginning the removal of spent nuclear fuel from the K-Basins at Hanford, which will begin later this year, November of 2000. This

project will carry out a first of a kind technical solution to move 2,100 metric tons of corroding spent nuclear fuel from at risk wet storage conditions in the K-East and K-West basins adjacent to the Columbia River into safe dry storage in a new facility away from the river.

We have also requested increased funding for a privatization project in the environmental management area to provide more progress in cleaning up and reducing risks from the environmental legacy of the Nation's nuclear weapons program.

In 2001, the privatization request includes \$450 million in budget authority to develop treatment facilities that will vitrify at least 10 percent by volume of the 54 million gallons of high level waste now stored at underground tanks at the Hanford site in Washington. The department is using a privatization approach that shifts many of the technical and performance risks to the contractor. This request, a \$327 million increase anticipates a decision in 2000 authorizing the contractor to proceed to the construction phase of the project.

The request also features new initiatives to accelerate and clean up and protect health and safety at the gaseous diffusion plants in Portsmouth, Ohio and Paducah, Kentucky. Last summer, after reports of alleged health and environmental problems surfaced at Paducah, the Secretary announced a strategy to investigate, identify and remedy at past or remaining health safety and environmental problems at these plants. The supplemental budget request in the 2001 budget will significantly increase funding for these two sites.

The environment safety and health budget provides an increase of \$38 million up to a total of \$166 million to make health and safety programs across the department a key priority. This also includes \$17 million for the energy employee compensation initiative that is pending now before the Congress. It is legislation to establish an occupational illness compensation program for our workers at our nuclear facilities.

The President has also directed that the National Economic Council conduct a review of other workplace exposures and illnesses at DOE sites. At the end of this process to be completed this spring, the President will receive an interagency study on health of our workers which may lead to additional measures beyond those which we have initially proposed.

The civilian radioactive waste management program is funded at \$437 million in our budget request to support determination of the suitability of the Yucca Mountain site as a permanent repository for nuclear waste. An increase of \$77 million for the design and engineering work at this site allows DOE to maintain the schedule included in the viability assessment. In fiscal 2001 an investment of approximately \$4 billion and almost 18 years of site investigations will culminate in a series of statutory decisions on whether the repository should be sited at Yucca Mountain. If the site is determined to be suitable a site recommendation report will be prepared and submitted to the President in fiscal 2001. Our schedule, as you know, Mr. Chairman is to complete the science at the end of this calendar year so that that will be on schedule.

The national security area, the fourth of our mission areas to be summarized this morning, we are asking for \$6.6 billion in total.

It is an increase of \$500 million or 8 percent. And it is focused on promoting peace and addressing the next generation of national security threats. One of the defendant's most important responsibility to the American people, the President and to you, the Congress, is to ensure the safety security and reliability of the Nation's nuclear stockpile.

Last fall the Secretary tasked Under Secretary Moniz to conduct a comprehensive internal review of the stockpile stewardship program. We have termed it the 30-day review. The principal finding of the review is that the stockpile stewardship program is working both in terms of scientific—of specific science of surveillance and production accomplishments and in terms of developing a program management structure that integrates the span of program activities. However, the program also faces significant people and infrastructure challenges, including attracting and retaining the best and brightest people at both the laboratories and production plants and maintaining and capitalizing an infrastructure in many, many instances is over 50 years old.

These challenges, along with the numerous requirements that have been added to the program since its inception, are being addressed by Secretary Richardson through his action plan.

We have made considerable progress on these issues in the last 3 months and continue to work very closely with the Department of Defense through the Nuclear Weapons Council to ensure that the U.S. nuclear deterrent remains viable into the future.

That concludes my summary of the statement. The full statement has been submitted to you for the record. I look forward to answering questions.

[The prepared statement of Hon. T.J. Glauthier follows:]

PREPARED STATEMENT OF T.J. GLAUTHIER, DEPUTY SECRETARY OF ENERGY

Mr. Chairman, I want to thank you for the opportunity to appear before the Subcommittee on the Department of Energy's Fiscal Year 2001 budget.

Management Reforms

Before I discuss the details of our FY 2001 budget request, I would like to address a major issue of concern to the Administration and the Congress—management systems of the Department. In the past year, a top priority has been to improve the way DOE manages its people, its resources, and its programs. The Secretary and I have given management efficiencies our closest attention.

First, we changed the way headquarters and the field interrelate. We instituted a Field Management Council to bring coherence to decision-making and weigh competing demands for requirements on the field, and assigned Lead Principal Secretarial Officers (LPSOs), responsibility for specific sites within the complex. We hired new managers at almost all our sites throughout the complex.

Second, we increased the accountability of our top managers. We are depending more upon "line management," have empowered LPSOs, and are holding them accountable for their specific areas of responsibility.

Third, working with the Congress, we regained control of assigning M&O contract employees to the Washington area. We restructured assignment procedures for these employees in Washington, required specifically defined tasks from them, and ordered closure of most M&O Washington offices reimbursed by DOE.

Fourth, working with the Congress, we are applying sound business principles to management of our construction and environmental remediation projects. We established and staffed the Office of Engineering and Construction Management within the Office of the Chief Financial Officer to make major fundamental changes in our project management procedures, principles, and practices.

Fifth, we initiated several immediate actions correcting security and counterintelligence problems within the Department which have existed for years, but had not

received the appropriate level of attention. We have made substantial progress on an extensive program of security and counterintelligence improvements, including:

- Creating the Office of Security and Emergency Operations, consolidating the security functions throughout the Department;
- Instituting a bottom-up internal security review; and,
- Creating the Office of Independent Oversight and Performance Assurance, which independently oversees security, cyber security, and emergency management within the Department and reports directly to the Secretary.

Sixth, last year, we launched the “*Workforce for the 21st Century*” Initiative to build a talented and diverse workforce which will strengthen our technical and management capabilities and address new challenges. Increasingly, the Department is competing with private industry to recruit and retain the highly skilled personnel required to deliver our missions. This growing skills gap has been recognized by the General Accounting Office, the Office of Inspector General, and this Committee. To address part of the scientific skills gap, we are proposing a *Scientific Recruitment and Retention Initiative* in this budget which totals \$10.0 million. Under our Workforce 21, for the first time in four years the Department has been able to target hiring of key technical personnel and strengthen recruitment and internship programs to create a pipeline of employees ready to enter the DOE workforce at the entry and mid-level jobs.

The Department also has an opportunity and responsibility to address the long-standing under-representation of women and minorities in senior management and technical positions. We have initiated an extensive review of workforce management practices to identify barriers that hinder the promotion of a more representative workforce. The review resulted in a Department-wide strategic plan called “*Achieving and Promoting a Workforce that Looks Like America: A Companion to Workforce 21*.” This plan, now in place, will help build a representative workforce and instill management systems that foster equal opportunity in hiring, promotion, and training practices. We have also established a task force against racial profiling and emphasized the need to promote more partnerships with minority educational institutions.

Seventh, under the direction of the Under Secretary Ernie Moniz, we also established a clearly defined and well articulated Departmental R&D portfolio. This will ensure our R&D programs are properly structured and take advantage of inter-relationships with all relevant program areas.

Lastly, the Department’s defense mission is being restructured into the National Nuclear Security Administration (NNSA). We established the NNSA, as required, on March 1. This included the successful consolidation of the Defense Programs, Non-proliferation and National Security, Fissile Materials Disposition, and Naval Reactors offices into the NNSA and involved the transfer of some 2,000 federal employees and 37,000 contractor employees to this new organization. As we discussed, the President has announced that he intends to nominate General John A. Gordon to head this organization. He also nominated Madelyn Creedon to be the Deputy Administrator for Defense Programs. We are committed to making the NNSA a viable, effective organization. The FY 2001 budget for the NNSA will total \$6.2 billion, an increase of \$432 million over this year’s level.

We’ve made progress in many areas, but we are far from finished. We will continue to improve the Department’s internal management capabilities to realize the full potential which our workforce and facilities hold for America. This budget will help us go farther. It is a forward-looking request emphasizing investments for the future.

Mission Accomplishments

Notwithstanding our efforts to address our management problems, the Department has continued successfully to carry out its critical missions. For example, in *Science*, Department-funded researchers received 43 of the 100 awards given in 1999 by *R&D Magazine* for outstanding technology developments with commercial potential. This is the largest number ever won by any public or private entity in the history of the awards.

In *national security*, the Departments of Energy and Defense certified for the third consecutive year that the safety, security and reliability of our nation’s nuclear weapons stockpile could be assured without nuclear testing. And we are well on our way to our fourth certification. We also completed important agreements with Russia to promote non-proliferation. And we are meeting critical mission objectives including new production requirements for the W76, W80, and W88 warheads, refurbishment of W-87 Peacekeeper warheads, successful accomplishment of subcritical experiments, initiation of production of tritium reservoirs at the Kansas City Plant, and re-establishment of pit production capability at Los Alamos.

In *energy resources*, we proposed legislation to restructure the electricity industry, to give consumers choices, and save them \$20 billion a year on their power bills. We hope Congress will act on it this year. We promoted new technologies for clean and renewable energy. We worked with utilities and the oil and gas industry to make systems Y2K compliant, and on January 1, the lights stayed on. We are responding to current oil supply problems through a range of measures: from the Secretary's diplomatic initiatives with major oil producing countries, both within and outside of OPEC, to the reestablishment of an Energy Emergency Office within the Department, to extensive consultation and coordination with energy suppliers and state and local government officials, to renegotiation of Strategic Petroleum Reserve royalty-in-kind deliveries to keep more oil in the market. On Saturday, the President announced the Administration's intention to create a Northeast heating oil reserve and the Department is working to expedite this decision.

For the *environment*, after years of delays and excuses, we opened the Waste Isolation Pilot Plant in New Mexico, the nation's first nuclear waste repository. We've successfully completed 44 shipments to WIPP to date and on March 10 resumed shipments from Rocky Flats after successfully completing additional waste certification requirements. We formed partnerships with governors to clean up and close former nuclear weapons production sites, and set aside over three hundred thousand acres as wildlife preserves in Washington, Colorado, Tennessee, South Carolina, Idaho, and New Mexico.

Strength Through Science

We've given this budget the theme *Strength Through Science*. Science is the focus because scientific research, both basic and applied, is integral to achieving our programmatic objectives in each of our mission areas. This is as true for our national security mission—which ensures that the nation's nuclear weapons stockpile remains safe, secure, and reliable, and counters the spread of weapons of mass destruction—as it is for our energy mission—to achieve continued reductions in the economic and environmental costs of producing and using energy resources. It is also true for our environmental mission to clean up the nuclear and toxic waste that is the legacy of the Cold War.

Many of the technologies that are fueling today's economy, such as the Internet, build upon government investments in the 1960's and 1970's—including the Office of Science's "Esnet." The Department of Energy and its predecessor agencies have been the sponsor of science-driven growth through the combined efforts of the national laboratories, 70 Nobel Laureates associated with the Department, and thousands of outstanding university- and industry-based researchers nationwide.

This Department is among the top federal research and development funding agencies, regardless of the criterion used. We are first in scientific facilities and rank third in basic research after the National Institutes of Health and the National Science Foundation. The Department of Energy is, at its heart, a science agency; in fact, 40 percent of our FY 2001 budget qualifies as R&D expenditures. We will spend a total of \$7.1 billion on R&D in FY 2000 and plan to spend \$7.7 billion in FY 2001, an increase of 8 percent.

Department of Energy FY 2001 Budget Request

The Department of Energy's FY 2001 budget request is \$18.9 billion. This is \$1.6 billion over this year's appropriation, a nine percent increase. Our budget is organized into four business lines; some highlights of each of these are described briefly below.

Energy Resources: \$2.2 billion (an increase of \$175 million, or 8 percent) to provide energy options for a stronger America. These investments will enhance U.S. energy security by providing more economical and environmentally desirable ways to use and produce energy. DOE continues to support a balanced portfolio of energy for America's future, and research and development (R&D) to enable a cleaner energy future. This request emphasizes energy infrastructure reliability, scientific carbon management and R&D, international energy R&D partnerships, and bio-energy/bio-power technologies.

The request features several cross-cutting initiatives involving the energy technology research offices (Fossil, Nuclear, Energy Efficiency and Renewable Energy, Science) that will ensure energy security through new economically and environmentally desirable means of using and producing energy. The Climate Change Technology Initiative and the International Clean Energy Initiative will identify and develop pre-commercial energy technologies and potential markets for their use. The latter effort builds on the conclusions of a recent report by the President's Committee of Advisors on Science and Technology (PCAST) that identifies the need to bridge the gap between development and deployment of new technologies.

The Electric Grid Reliability Initiative will develop policies and technologies to enhance the security of our electricity supplies. The Carbon Sequestration Initiative follows a technology roadmap to accelerate R&D to mitigate the impacts of carbon emissions.

The Enhanced Ultra Clean Transportation Fuels Initiative targets government and industry resources to develop a portfolio of advanced petroleum-based highway transportation fuels and fuels utilization technologies that are responsive to near- and mid-term environmental, regulatory and technical challenges.

Finally, the Bioenergy/Bioproducts Initiative will fund research to help make biomass a viable competitor as an energy source or chemical feedstock.

The *Fossil Energy* Research and Development program level of \$385 million includes funding for the up-graded National Energy Technology Laboratory for fossil fuels research. This budget continues investments in advanced technological concepts and development of highly efficient power generation and fuel producing technologies that together could reduce, or perhaps nearly eliminate, carbon emissions from fossil fuel facilities. The centerpieces of this research include the Vision 21 energy plant of the future and carbon sequestration.

The proposed deferral of \$221 million in the Clean Coal Technology program reflects schedule delays from the rescheduling of certain projects. The Department believes the Clean Coal Program is important and we anticipate to successfully complete all of the ongoing projects.

Funding for the Office of *Energy Efficiency and Renewable Energy* includes support for research to assist in the development of more efficient homes and buildings, wind energy, geothermal, photovoltaics, and bioenergy and biopower projects. Research will also continue in the on-going Partnership for a New Generation of Vehicles (PNGV), which is developing the prototype advanced technology vehicle in conjunction with the automotive industry. We are requesting \$1.26 billion for these programs in FY 2001—an increase of 18%.

The Weatherization Assistance Program, which helps to reduce heating and cooling bills for low-income residents, has an increased budget request for FY 2001 to weatherize approximately 77,000 homes. In addition, the Administration is requesting \$19 million for this program in the FY 2000 Supplemental Appropriations package to cover 9500 more homes.

This Office also funds the Federal Energy Management Program, which helps federal agencies identify, finance and implement energy efficiency improvements for their facilities. The Federal Government spends \$8 billion each year on energy for its own facilities and operations, and this program saves money for taxpayers by reducing that spending. Our FY 2001 request for this program is \$29.5 million—a 23% increase.

The budget for the Office of *Nuclear Energy, Science and Technology* has an increase of \$21 million to support such important activities as nuclear energy research and development (including the expanded Nuclear Energy Research Initiative) and managing the inventory of depleted uranium hexafluoride. The Department is also proceeding with the project to design and build facilities to convert this inventory to a more stable form, and in a manner that fully protects workers and the environment. This office also conducts a program to produce and distribute isotopes necessary for medical, industrial and research purposes, including the Advanced Nuclear Medicine Initiative.

The *Power Marketing Administrations* (PMAs) sell electricity primarily generated by hydropower projects located at federal dams. First preference for the sale of power is given to public bodies and cooperatives. Revenues from selling the power and transmission services of the three PMAs are used to repay the U.S. Treasury for annual operation and maintenance costs, repay the capital investments with interest, and assist capital repayment of other features of certain projects. However the PMAs also buy and sell, as a simple pass through, purchase power and wheeling. This budget assumes that in FY 2001 the PMAs will use offsetting collections from the sale of electricity to finance purchase power and wheeling expenses previously funded by direct appropriations. Purchase power and wheeling activities financed through this method will be phased out in annual decrements by the end of FY 2004.

Science and Technology: \$3.2 billion (an increase of \$337 million, or 12 percent) to strengthen our science programs and provide the knowledge base for future innovation, thereby improving America's long-term position in an increasingly competitive world economy. We continue to promote a strong national scientific infrastructure and provide the technical foundations for our applied missions. The FY 2001 budget includes initiatives to advance ongoing work at the frontiers of nanoscience, scientific computing, microbial genomics, robotics, bioengineering, and it will allow us to increase the use of our scientific facilities.

The budget calls for \$182 million for Advanced Scientific Computing Research (ASCR) to increase computer modeling and simulation research and development.

Microbial genomics, an outgrowth of the Department's pioneering work in the Human Genome Program, is expanding efforts in microbial cell research. This research, which involves the study of organisms that have survived and thrived in an extreme and inhospitable environment, could hold the key to advance energy production and use, environmental cleanup, medicine, and agricultural and industrial processing.

Nanotechnology, or research and development into extreme miniaturized technologies, is funded at \$91 million, of which \$83 million is in the Science budget and \$7 million is in Defense Programs. This work gives researchers the ability to manipulate matter at the atomic level and could spark further development of supercomputers that fit in the palm of the hand, or tiny devices to fight disease or heal injuries from inside our bodies. Also included in this science budget is \$281 million for the Spallation Neutron Source and \$247 million for fusion.

The FY2001 budget continues to strongly support the Department's unique scientific user facilities. Each year over 15,000 university, industry and government-sponsored scientists conduct cutting edge experiments at these particle accelerators, high-flux neutron sources, synchrotron radiation light sources and other specialized facilities.

Environmental Quality: *\$6.8 billion (an increase of \$511 million, or 8 percent) to protect the environment and our workers.* These amounts are required to ensure that each cleanup site meets safety and legal requirements, supports accelerated cleanup and site closure, and maintains others critical environmental priorities.

The *Environmental Management* budget of \$6.3 billion supports proposals to continue our efforts to meet cleanup obligations to communities throughout the country:

- \$1,082 million for *Defense Facilities Closure Projects*;
- \$4,552 million for *Defense Environmental Restoration and Waste Management*;
- \$515 million for *Defense Environmental Management Privatization*;
- \$286 million for *Non-Defense Environmental Management*; and
- \$303 million for the *Uranium Enrichment D&D Fund*.

These funds will allow the Department to continue to implement the agreement the Secretary reached last year with the Governors of Colorado, South Carolina, Tennessee, and Washington on a Statement of Principles laying the foundation for a cooperative working relationship between DOE and the states with DOE cleanup sites. Our FY 2001 request continues an aggressive approach to address immediate and long-term environmental and health risks of the weapons complex. In March 1999, we made great progress when we opened the Waste Isolation Pilot Plant in New Mexico as a safe, permanent disposal location for transuranic nuclear wastes. The FY 2001 request represents an increase of approximately \$440 million over the FY 2000 current appropriation to continue making progress in completing cleanup and closing sites.

A budget request of \$664.7 million supports closure of Rocky Flats by December 15, 2006, the closure date targeted in the new cost-plus-incentive-fee contract that took effect February 1, 2000. The Rocky Flats Site is the largest site challenge to accelerate cleanup and achieve closure in 2006, and to date significant progress has been made toward making this goal a reality.

The FY 2001 request furthers our efforts to protect the Columbia River by beginning the removal of spent nuclear fuel from the K-Basins at Hanford in November 2000. This project will carry out a first-of-a-kind technical solution to move 2,100 metric tons of corroding spent nuclear fuel from at-risk wet storage conditions in the K-East and K-West basins adjacent to the Columbia River into safe, dry storage in a new facility away from the river.

The increased request for *EM Privatization* will provide for more progress in cleaning up and reducing risks from the environmental legacy of the nation's nuclear weapons program. The FY 2001 privatization request includes \$450 million in budget authority to develop treatment facilities that will vitrify at least 10 percent by volume of the 54 million gallons of high level waste now stored in underground tanks at the Hanford Site in Washington. The Department is using a privatization approach that shifts many of the technical and performance risks to the contractor. The request, a \$327 million increase, anticipates a decision in FY 2000 authorizing the contractor to proceed to the construction phase of the project. The amount requested will keep the project on schedule to begin hot operations in 2007.

The request features new initiatives to accelerate cleanup and protect health and safety at Gaseous Diffusion Plants (GDPs) in Portsmouth, Ohio, and Paducah, Kentucky. Last summer, after reports of alleged health and environmental problems surfaced at Paducah, the Secretary announced a strategy to investigate, identify and remedy any past or remaining health, safety and environmental problems at these

plants. The Secretary appointed an investigation team that made recommendations which resulted in a request for funding to achieve health surveillance, safety assessments, and environmental remediation goals within a rapid timeframe. The Administration also has submitted a \$26 million FY 2000 Supplemental Budget Request to Congress to address additional concerns—\$10 million for ES&H activities and \$16 million for environmental restoration. This supplemental request and the FY 2001 budget will significantly increase funding for the two GDP sites.

The FY 2001 budget request also provides funding, subject to new legislative authority, to initiate cleanup of uranium mill tailings in Moab, Utah, to restore lands at the gateways of some of our most spectacular national parks.

The *Environment, Safety and Health* budget provides an increase of \$38 million, to \$166 million, to make health and safety programs a key priority of the entire department. (\$40 million is included in the Energy Supply account for non-defense ES&H activities.) This also includes \$17 million for the Energy Employee Compensation Initiative. Pending now before Congress is legislation to establish an occupational illness compensation program for the Department of Energy's workers at its nuclear facilities. The bill has three parts, each addressing a specific group of workers eligible for compensation benefits:

- The Energy Employee's Beryllium Compensation Act, addressing current and former DOE federal and contractor workers with beryllium disease. Eligible workers would receive reimbursement for prospective medical costs associated with the illness and a portion of lost wages, or have the option of receiving a single, lump sum benefit of \$100,000;
- The Paducah Employees' Exposure Compensation Act, addressing Paducah, Kentucky employees exposed to radioactive materials; and
- A specific group of Oak Ridge, Tennessee employees determined by an independent panel of occupational physicians to have illnesses due to workplace exposure.

The President has also directed that the National Economic Council (NEC) conduct a review of other workplace exposures and illness at DOE sites. At the end of this process, the President will receive an interagency study on the health of our workers which may lead to additional measures beyond those we initially proposed.

In response to worker health concerns, the Department has also established the *Chronic Beryllium Disease (CBD) Prevention Program*. Contractors at DOE sites with the potential for worker exposure to beryllium, a metal used in many nuclear applications, are required to submit a detailed plan to meet prevention program requirements. This is intended to minimize the number of future cases of disease from current workers. The program also calls for monitoring the health of "beryllium-associated" workers to promote early detection of CBD.

The *Civilian Radioactive Waste Management* program is funded at \$437 million to support determination of the suitability of Yucca Mountain as a permanent repository for nuclear waste. An increase of \$77 million for Yucca Mountain design and engineering works allows DOE to maintain the schedule of work included in the Viability Assessment. In FY 2001, an investment of approximately \$ 4 billion and almost 18 years of site investigations will culminate in a series of statutory decisions on whether the repository should be sited at Yucca Mountain. If the site is determined to be suitable, a Site Recommendation Report will be prepared and submitted to the President in FY 2001.

National Security: *\$6.6 billion (an increase of \$502 million, or 8 percent) to promote peace and address the next generation of national security threats.* One of the Department's most important responsibilities to the American people, the President, and to you, the Congress, is to ensure the safety, security and reliability of the nation's nuclear stockpile. A dependable nuclear deterrent remains at the root of the United States' national security policy. Once again, without underground testing, our Stockpile Stewardship Program is working today to confirm its continued safety and reliability. It draws upon the best scientific resources in our complex, allowing the Secretary of Energy and the Secretary of Defense to annually certify to the President that the nuclear deterrent does not require underground testing at this time. Three annual certifications—and a soon-to-be-completed fourth—are proof of its enduring success.

Last October, the Secretary tasked Under Secretary Moniz to conduct a comprehensive internal review of the Stockpile Stewardship Program (30-Day Review). The principal finding of the review is that stockpile stewardship is working, both in terms of specific science, surveillance, and production accomplishments, and in terms of developing a program management structure that integrates the span of program activities. However, the program does face significant people and infrastructure challenges, including attracting and retaining the best and the brightest people at both the laboratories and the production plants, and maintaining and

recapitalizing an infrastructure that—in many instances—is over fifty years old. These challenges, along with numerous requirements that have been added to the program since its inception, are being addressed by Secretary Richardson through his 15-point Action Plan. We have made considerable progress on these issues in the last three months and continue to work very closely with the Department of Defense, through the Nuclear Weapons Council, to ensure that U.S. nuclear deterrence remains viable into the future.

In addition, our supplemental budget request for FY2000 of \$55 million will allow us to address infrastructure issues. It will specifically apply to the workforce, production readiness, required infrastructure, and safety challenges at the three production plants:

- Y-12 Plant in Tennessee;
- Kansas City Plant in Missouri; and the
- Pantex Plant in Texas.

The National Defense Authorization Act for FY 2000 created a semi-autonomous agency within the Department, the National Nuclear Security Administration (NNSA). These national security program increases are necessary to ensure the safety, security, and reliability of America's nuclear weapons stockpile, reduce nuclear proliferation threats world-wide, and protect against the threat of weapons of mass destruction. A total of \$6.2 billion—up \$432 million from the funding level for these programs in FY 2000—is requested for departmental programs that are consolidated into the NNSA (Defense Programs, Nonproliferation and National Security, Fissile Materials Disposition, and Naval Reactors). The Albuquerque and Nevada Field Operations offices also are under the jurisdiction of the NNSA.

The remaining national security budget request includes department-wide offices of the Secretary of Energy that are not part of the NNSA—the Offices of Intelligence, Counterintelligence, Security & Emergency Operations, Independent Oversight & Performance Assurance, and Worker Transition. The most significant increase is for the Office of Security and Emergency Operations, with a program level of \$340 million. The increase of \$48 million, assuming favorable Congressional action on our supplemental request, is mainly for additional cyber-security activities and personnel.

Conclusion

Our FY 2001 budget is a strong statement reflecting this Administration's commitments to the American people. It is a request that emphasizes our strength in science and enables us to effectively deliver our missions. I look forward to working with you, Mr. Chairman and other members of the Subcommittee, to meet our responsibilities to the American people.

Mr. BARTON. Thank you, sir.

The Chair is going to recognize himself for 7 minutes. We are going to recognize each member then for 7 minutes. Then if we need additional questions, we will do that. I have a flight at 12:27, so we are trying to wrap this up by 11:45 if possible. I want to say at the outset, Mr. Secretary, that I understand that the Department of Energy is misnamed. You really—most of your resources and most of your responsibilities are more in weapons management, weapons development, waste cleanup. So it is no negative on the Clinton administration. But the \$18 billion proposed budget, I went through last night and then just glanced through your testimony again, I don't see too much money being spent on energy, energy research especially. What is the total, and I don't need an exact number, but what would you estimate of your \$18 billion request is actually going to try to increase domestic energy supply?

Mr. GLAUTHIER. Well, the energy resources area, one of our four mission areas is a total of \$2.2 billion.

Mr. BARTON. But most of that is not energy research to actually increase energy supply. It is environmental management, and I think you used the euphemism "carbon dispersion" or something.

Mr. GLAUTHIER. Sequestration.

Mr. BARTON. That is hardly adding to our energy supply. I am talking about Mr. Strickland, who might want to spend a little

more in clean coal technology so we could use more of a coal resources or myself who might want to spend more in natural gas research or oil research so you get a little more out of our domestic oil wells or find more markets for natural gas, I am talking about actual things that would minimize our growing dependence on foreign sources of energy.

Mr. GLAUCHIER. Well, Mr. Chairman I think the majority of the funds, the vast majority of those funds in the \$2.2 billion dollars do speak to that, either directly or indirectly. Directly in research and areas like fossil energy research or clean coal programs but indirectly also in the energy efficiency programs, which reduce the amounts of energy we need to consume, so that every advancement we can make in appliances or automobiles or industrial motors that require less energy also benefit.

Mr. BARTON. I will grant you that if you can increase conservation, you use less energy, and we would agree on that. But last year did the United States of America increase its energy production or decrease its energy production? From all sources?

Mr. GLAUCHIER. From all sources.

Mr. BARTON. That we actually produce in this Nation, not import?

Mr. GLAUCHIER. We decreased oil production, but I suspect increased electricity production, for example.

Mr. BARTON. Well—

Mr. GLAUCHIER. So on balance, I am not sure.

Mr. BARTON. You are saying that we added some gas-fired turbine plants, and probably on a net basis that offset the decline in domestic oil production.

Mr. GLAUCHIER. I am not sure it offset completely, but the economy—

Mr. BARTON. Well, I am not either. You are not under oath. I am not trying to trick you. I am just pointing out a basic fact is that we are not significantly increasing domestic energy production. Now, because the electricity markets are changing, we are building more gas-fired turbine plants, and some of them have double capacity and that, on a net basis, is probably slightly increasing our overall capability. But our oil production is declining. Our coal production is flat and may be slightly increasing. Our natural gas production is—could increase significantly, but stymied by transportation bottlenecks primarily in the northeast.

So I would encourage you to look a little bit more in trying to actually do more to increase domestic energy production.

I want to switch gears just a little bit. Do we have the clock? We do have the clock on? I don't want to take up too much more than my time than I am supposed to. On the floor 2 days ago, we had a bill out of the Foreign Relations Committee that directed the Secretary of Energy to give a report to the President and the Congress about the OPEC nations if they are price fixing. In my opinion, it is one of the silliest pieces of legislation we have had before the Congress in the 15 years I have been in Congress. I was one of only 38 members that thought that through, the other 300 and some odd voted for it.

But in the middle of that debate, in the middle of that debate, several northeast congressmen got up and talked about the need

for a refined fuel oil reserve in the northeast. That that somehow would have been a salvation for the heating oil problem that was legitimately faced in the northeast this winter.

Now, I pointed out that section 157 of the Energy Policy Conservation Act, the Strategic Petroleum Reserve authorizes such a reserve. It is the current law. So I was a little bit struck when earlier this week or late last week, the President came forward, and with great fanfare announced the creation of such a reserve. So I want to just try to find out what the thinking is here of the administration. Because last March, March 15th, 1999, Secretary Richardson submitted a letter to the Speaker of the House, Danny Hastert, and said we ought to repeal that. He said subsection F would amend section 152 of EPCA, by deleting the definition of early storage reserve industrial petroleum reserve and regional petroleum reserve. There is no need to establish an early storage reserve now that the SPR reserve is operational. And an industrial petroleum reserve has never been established because of policy consideration. And EPCA provisions referring to it should be struck. In the course of several reviews conducted since the passage of EPCA, DOE has consistently determined the government owned and controlled crude oil reserve located in the Gulf Coast region is the most cost effective way to ensure continued oil product supplies to the Nation. Therefore, the regional petroleum reserves are not necessary.

Then it goes further, next page said that the subsection 157 the regional petition reserve should also be struck. It says the department is determined in its report issued on May the 13th, 1998, that a government owned and controlled crude oil reserve located the Gulf Coast region is the most cost-effective way to ensure continued oil product supplies to the Nation. Accordingly, product supplies are not required to ensure prompt and effective responses to supply interruptions because domestic refining capacity is adequate to supply petroleum products during a supply emergency.

So that is May—I mean, March 15 of last year. Mr. Gee, who I think is sitting right behind you looking very intelligent as he is and being glad that he is not up here at the desk I am sure, September the 16th, 1999, he says the same thing when he testified before this subcommittee. “the need for a regional petition reserve is not foreseeable and funding for such a program is not justifiable, because based on its expected benefits, the administration bill deletes both this requirement and references to regional and refined product storage.”

So all the official documentation until about a week ago says we don't need this. I have got the report here in June 1998 and the summary. It is to design and construct a large reserve and then adopt an inexpensive field strategy and an unresponsive employment policy would produce a reserve whose cost would greatly outweigh its benefits.

Now, I understand that Mr. Markey and Mr. Gejdenson and some of my Republican friends too, it has not just been the Democrats, have been demanding that the existing law be obeyed and that this is something that's necessary. But all your policy documents that you have submitted indicate that while it may look good on paper, it just doesn't make any sense. So is all this infor-

mation wrong or have you all found some new documents and some new models that showed that you were incorrect in the past and now you have seen the light?

Mr. GLAUTHIER. Well, Mr. Chairman, we do want to acknowledge that these situations are dynamic and we continue to reassess the situation. What we found in the last year is that the distribution system was not, in fact, as flexible as we had thought. In particular, we saw the industry reducing its own inventories at a faster rate than we would have expected. Our proposal now is to have a reserve all right, but not the same one that is in the statute because the way the provision is already authorized in law, does not provide us the flexibility to use a reserve of that sort when there is a regional problem, a regional spike in prices or a regional disruption in supply. The trigger that is required to be able to release oil from that reserve in the current legislation is, or the current law is a national emergency. Now, we need to have that modified we need to have it done in a way that really would reflect a regional problem and then—

Mr. BARTON. You want a different trigger mechanism.

Mr. GLAUTHIER. That is the primary change that is going to be needed.

Mr. BARTON. Do you want to amend your budget that you submitted to fund this reserve, and if so, how much? I didn't see any money in the budget for this newly found fervor for the reserve. So how much money do you think we ought to put into it?

Mr. GLAUTHIER. Well, there are two types of funding that might be required. One is for structuring, leasing a facility and operating, and the other one is the purchase of the oil itself. The purchase of the oil is by far the greater amount of money, and we do not propose to actually seek appropriations for that. The idea would be that we essentially effect a transfer of oil that is in the Strategic Petroleum Reserve now so that about 2 million of that is actually located in a reserve in the Northeast.

Mr. BARTON. So you are not going to have a refined fuel oil reserve that is available in the Northeast?

Mr. GLAUTHIER. Well, this would be a Home Heating Oil Reserve, and when I said effectively transfer, we don't mean physically to take oil from the Strategic Petroleum Reserve and pipe it up there, but rather to exchange oil that is in the reserve for products that would be stored up in the Northeast, so that—

Mr. BARTON. I guess I am just ignorant, but it would seem to me if you wanted to—it does make some sense to me to have fuel oil available for distribution where the people need it. Oil that is in the Strategic Petroleum Reserve down on the Gulf Coast takes time to get it out, it takes time to refine it, it takes time to transport it and then it takes time to distribute it. So obviously if we had a problem next winter like we had this winter and that was our refined product reserve, it would probably take 2 months to get it there and that wouldn't help anybody, but I don't hear you saying that you want to actually physically locate fuel oil in Boston, in New York, in Connecticut, wherever, having it available so that if you have a severe winter, it is there.

You are not saying that?

Mr. GLAUTHIER. No. I am sorry, Mr. Chairman, that is what I intended to say. I haven't said it clearly.

The proposal would be to have a reserve for home heating oil in the Northeast, somewhere located in the Northeast.

Mr. BARTON. Real fuel oil?

Mr. GLAUTHIER. Yes.

Mr. BARTON. It would be in real tanks?

Mr. GLAUTHIER. That's right.

Mr. BARTON. Okay. Not just on paper somewhere.

Mr. GLAUTHIER. That is correct.

Mr. BARTON. You are not requesting we fund that; you just want the political benefit of saying, we ought to do it and let the next administration pay for it?

Mr. GLAUTHIER. We will be requesting some funding for it. We will send a budget amendment forward for the 2001 budget, for only the cost associated with leasing of tanks and of some of the operations, which—

Mr. BARTON. So you are not going to add new capacity? The same capacity that was inadequate this winter, you are just going to lease it so it will be inadequate next winter?

Mr. GLAUTHIER. On a national scale, we have about 580 million barrels of oil in the Strategic Petroleum Reserve.

Mr. BARTON. It is crude oil. It is not refined.

Mr. GLAUTHIER. That is correct. We propose to essentially trade a couple million barrels of that oil for the refined products that we want to store in the Northeast, so we don't have to ask for appropriations to purchase those products; and that will—

Mr. BARTON. So you are going to go to the private oil companies and say, we will give you 2 million barrels of crude oil in the SPR if you give us 2 million barrels of fuel oil and store it in the Northeast.

Mr. GLAUTHIER. Whatever the right numbers work out to be. We haven't done all the analysis to work it out.

Mr. BARTON. But there is a principle—

Mr. GLAUTHIER. That is exactly the principle, and of course, we are continuing to replenish the oil in the Strategic Petroleum Reserve from our royalty-in-kind program, so even though this would temporarily be a slight reduction in the Gulf Coast, we would make that up. And, in fact, the reserve is still part of the national reserve. We would have that portion in refined products in the Northeast.

Mr. BARTON. My time has expired, but isn't it true that all the analysis that was done a year or two ago really—I mean, I have no reason to oppose a Northeast refined or regional refined product reserve if it really made sense. It makes great political sense, because it shows we are doing something; but in a practical way, it doesn't make sense. It is very costly, it is very inefficient. It is not adding the capacity if you are not going to build new storage tanks.

Mr. BURR. Mr. Chairman, could I—

Mr. BARTON. It would seem to me—it would seem to be a lot more productive to talk about things that really help, like let us try find a way to build more natural gas pipelines or refined petroleum pipelines. Then if we need to create some sort of an emergency distribution system where we allocate fuel oil to the home-

owners that need it and have contracts for industrial customers, that might actually help a little bit.

It might take a while to do. It is not easy getting the right of way to build these pipelines and things we need to do, things to increase the actual supply that can be distributed, as opposed to this idea that didn't make a lot of sense. And when the weather was a little bit better, you were honest enough to say that.

Mr. BURR. Mr. Chairman, could I ask you to yield time, that you don't have, just for a clarification; and I would ask for Mr. Strickland's patience.

It hasn't been that long since I left business, and the scenario that you just painted for me, I was in the wholesale distributing business where we relied on retailers to stock a certain amount of goods. And we were in seasonal products; if at any point we made a decision to have a greater stock because we anticipated a change in Mother Nature which might require more heating equipment or lawn equipment, we automatically saw a reduction in the stock of our retailers, and they became 100 percent reliant on our increase in inventory versus an insecure filing on their part that they wouldn't have the products.

My fear under the scenario that you just conveyed to me is that the Federal Government would guarantee some number of additional gallons of fuel oil, at which time the oil companies would say, therefore, we don't need even what we had stocked last year in our inventories; and in fact, if we have a winter that wipes us out, we have got the reserve that we go to and we are protected.

I would only caution all of us that I think that that scenario forces an economic decision that will not have the end result that all of us would hope we achieve.

And I thank the chairman for yielding.

Mr. BARTON. I want to say one thing before I recognize Mr. Strickland.

One thing you said actually makes sense, if we are going to keep the strategic regional reserve on the books, and I don't have any opposition to that if that is what the administration wants to do. Changing the trigger mechanism does make sense; we should make it possible on a regional basis, if you have got a supply interruption like we had, whatever you have got on the books, if you have got a fuel source there that can be used, if—give the Secretary or the President the right to use it. I am all for that.

But I am not convinced that the underlying idea makes any sense except in a political "after the horse is out of the barn" sense, well, we want to do this next time.

Mr. GLAUTHIER. May I comment, Mr. Chairman?

Mr. BARTON. Sure.

Mr. GLAUTHIER. I appreciate your comments and your support for that proposal. The proposal we have made is only one element on a whole range of things that need to be done. We would agree that this, by itself, would not be sufficient to take care of the problem; and so we have a lot of long-term actions that are needed to increase natural gas use in the East, do things that will help increase domestic production of oil and gas throughout the country, and we need to work together on a whole range of things.

Mr. BARTON. The next 2 to 3 months, when I am not trying to help put together an electricity bill, which the administration wants to do, we are going to do some hearings on long-term solutions or at least possible solutions.

We have not had a debate in this country for a substantial amount of time on increasing domestic energy supply because we have had low energy prices. We have taken it for granted, and if there is a silver lining, what has happened in the last 3 to 4 months, it is that the country's attention has been refocused on how vulnerable we are to foreign sources of energy imports; and it is not bad that we are focused on that.

The gentleman from Ohio is recognized.

Mr. STRICKLAND. Thank you, sir.

Mr. Deputy Secretary, I would like to direct your attention to page 15 of your testimony. You are talking about Worker's Compensation, and you say the bill has three parts, each addressing a specific group of workers eligible for compensation benefits.

You mention on the first bullet the Beryllium Compensation Act; you say that eligible workers would receive reimbursement for perspective medical costs associated with illness and a portion of lost wages or have the option of receiving a single lump-sum benefit of \$100,000.

The second bullet lists the Paducah Employee's Exposure Compensation Act, addressing the Paducah, Kentucky, employees exposed to radioactive materials.

The third bullet, a specific group of Oak Ridge, Tennessee, employees determined by an independent panel of occupational physicians to have illnesses due to a workplace exposure.

Mr. Deputy Secretary, looking at that testimony, can you identify an obvious missing piece of that compensation plan?

Mr. GLAUTHIER. Well, I am not sure which piece you are referring to. The portion that comes to my attention is, of course, all the other facilities in our complex.

Mr. STRICKLAND. Mr. Deputy Secretary, what about the workers at the Piketon facility, a sister facility to the Paducah plant, a plant where my employees, my constituents, were exposed to the very same radioactive materials, plutonium and other materials, as were those employees at the Paducah, Kentucky, plant?

Can you tell me, sir, any rational reason why this administration would choose to compensate the employees at Paducah and exclude the employees at Piketon, Ohio.

Mr. GLAUTHIER. That is the subject of the next paragraph of the testimony, which is the ongoing study under the direction of the National Economic Council at the White House, and which is making good progress.

Mr. STRICKLAND. Can you explain to me, though, because my plant is a sister plant to the Paducah plant and the very same materials were handled by these employees, why this administration would choose to provide a compensation package to the Paducah, Kentucky, employees and not to Piketon, Ohio, employees?

Mr. GLAUTHIER. Only because we did not want to delay the proposal for the Paducah workers at the time. We did not have the data at that time to be able to identify the extent of the exposure.

Mr. STRICKLAND. Can you tell me today that once the medical investigation is completed at the Piketon site, at the conclusion of that investigation are that my workers who were exposed to the materials, as were the workers at the Paducah plant, can you guarantee me today on behalf of this administration that my workers then will be included in this same compensation package?

Mr. GLAUTHIER. I think the commitment I can make to you today is that the administration is very actively engaged in exactly that question, that we hope to have a decision soon, and—

Mr. STRICKLAND. In all due respect, sir, what I am asking you to answer is if the conditions are identical to the conditions that existed at Paducah, if the materials that were handled were identical to the materials that were handled at Paducah, if that conclusion is reached by this investigation team that is currently carrying out an investigation, can you give me an assurance that if those conditions are identical, that this administration will ask for the same compensation package for my constituents?

Mr. GLAUTHIER. That is the logic, the rationale that the working group is working toward at the administration, and that premise is the working premise of the group.

I can't give you a firmer guarantee, because, of course, a decision has to be made by the President and hasn't been made yet; but I think it will be made.

Mr. STRICKLAND. So it is the President's fault that this has not been done?

Mr. GLAUTHIER. He was not supplied or provided the options or the data on which to do it.

Mr. STRICKLAND. Well, I think the President should be provided with the options, because this is a serious matter; and I have been told that forces within the administration—the Department of Defense, the Department of Justice, OMB—are determined not to include my employees because they don't want to open up the possibility of litigation. DOD is concerned that employees at their sites may require the same kind of compensation package.

And, you know, I understand those concerns, but I cannot justify to my constituents why they are being left out of a compensation package; and I want to tell you, I am glad the Paducah, Kentucky, employees are in fact being compensated. They deserve to be compensated. But the workers at the Piketon site deserve equal compensation. It is unacceptable that this kind of discrimination would occur.

Mr. GLAUTHIER. One of things I can tell you is that, earlier this week, I was in a meeting with representatives of the same agencies, the Defense Department and others you cited, and those agencies have dropped their opposition of the type you talked about, so that I think they are prepared now to acknowledge and to support some program that will go forward this way.

Mr. STRICKLAND. Can you give me some idea as to when the data may get to the President, so that he can fully participate in this decision?

Mr. GLAUTHIER. It will be in the next few weeks. The timing, as you know, from last fall was, this would be completed in the spring. We are now in the spring. I do expect this will be completed this spring. I cannot give you anything more precise than that.

Mr. STRICKLAND. Mr. Deputy Secretary, there was a hearing in the Senate this week; I am sure you are aware of that hearing. Two employees from my plant testified about serious injuries.

Are you aware of that hearing?

Mr. GLAUTHIER. Yes.

Mr. STRICKLAND. I just wanted to draw your attention to page 259, volume 2, Paducah Employee's Exposure Compensation Act, and this is what it says.

"In recognition of the fact that Federal and contract workers at DOE's gaseous diffusion facility in Paducah, Kentucky, were exposed to plutonium and other highly radioactive materials, without their knowledge, as a result of the policy of reusing uranium in the production of plutonium."

It is no secret that the workers at the Piketon, Ohio, enrichment facility managed the same type of material and were exposed to plutonium and other highly radioactive materials without their knowledge and without adequate protection; and some of these employees now have serious health consequences. I visited one of those individuals weekend before last.

It is beyond belief that this administration would come forth with a compensation package that would include employees at Oak Ridge, Tennessee, and in Paducah, Kentucky, and leave out the employees in Piketon, Ohio; it is just beyond belief.

You know, I have asked—I don't hold you personally responsible for this; but I have asked over and over and over for an explanation, and what I get is double-talk. It is totally unacceptable, and I want you to carry this back to whoever you need to carry it back to, if it has to be the President that hears this or anyone else.

This is unacceptable, and I cannot believe that my colleagues on both sides of the aisle will stand for this kind of injustice, and so I have expressed myself, I guess, as strongly as I can.

Mr. GLAUTHIER. Mr. Congressman, may I comment?

Mr. STRICKLAND. Yes.

Mr. GLAUTHIER. I do appreciate your comments. I will take those back and want to make it as clear as possible that the decision that was made last fall was not a policy decision that somehow workers at your site did not deserve to be compensated, but rather strictly on the basis of the available data, the available information.

We had basis—we felt we could make a proposal, we could support legislation at the Paducah site. We did not have the same amount of data, we did not have the factual basis to go forward yet.

So the question is, should we delay and do both later; or should we do one then and tell you, we were going to work on the other, which we are now trying to complete?

Mr. STRICKLAND. And I understand that, and I told members of this administration and representatives from OMB that if they would simply make a guarantee to me that if the investigation determined that my workers were exposed to these materials unknowingly, without adequate protection, that they would in fact be given the very same compensation package; and that guarantee has not been forthcoming, and I really, with all due respect, I don't think it has been forthcoming from you today.

Maybe you can't make that decision sitting here, but someone in this administration needs to say to me that there will be no dis-

crimination. I don't want my workers to get anything they don't need or deserve or aren't eligible for, but neither do I want them to be discriminated against for reasons that are—I don't know—irrational in my mind.

Mr. GLAUTHIER. Well, if I could go one step further, our goal is to try to be sure there is fair and equitable treatment to workers throughout our complex at all of the sites, because there may be health problems at other sites as well.

Mr. STRICKLAND. I understand. But my plant is a sister plant to the Paducah plant. They handle the same materials, the very same materials, and why you can't just say, they are going to be treated in an equitable fashion, is beyond me. It is just beyond me.

Mr. GLAUTHIER. It is our goal; I can't give you the guarantee, because I don't have that authority, but I can give you that statement of a goal. That is where we are trying to be.

Mr. STRICKLAND. Well, somebody in this administration ought to give that guarantee, and until they do, this issue is not going to go away.

I have used up my time. Thank you.

Mr. NORWOOD [presiding]. Thank you very much, Mr. Strickland. It is pretty clear to all of us that you have sensitized all of us to this issue, and I think you will find friends on both sides of the aisle.

This chairman's chair feels pretty good, but I am actually going to be next because I was next here. Well, whatever, I am going next.

Mr. Secretary, I have two or three little fast questions. How long have you been at DOE?

Mr. GLAUTHIER. Just completed 1 year of service in this position.

Mr. NORWOOD. How many employees over there now? How many worldwide employees at DOE?

Mr. GLAUTHIER. The Federal workforce of DOE is about 15,000, which includes the Federal Energy Regulatory Commission and the Power Marketing Administrations. When you deduce that the DOE itself, which is really running the programs, is just under 11,000 Federal employees, and about 110,000 contractor employees, other contractor employees, and then there are additional subcontractors.

Mr. NORWOOD. How many in town here?

Mr. GLAUTHIER. I am not sure. About 5,000 of the Federal employees.

Mr. NORWOOD. Did you drive to work this morning?

Mr. GLAUTHIER. Yes, sir.

Mr. NORWOOD. Do you come in our own car or company car?

Mr. GLAUTHIER. I did.

Mr. NORWOOD. Can I ask you what kind of car you have got?

Mr. GLAUTHIER. It is a U.S. car. It is a Buick made by the Auto Workers.

Mr. NORWOOD. We are darn proud it is a U.S. car, I can tell you that.

Did you drive over here to this meeting?

Mr. GLAUTHIER. No, I did not. I was driven in a Department car here.

Mr. NORWOOD. That is what I mean, you came by automobile?

Mr. GLAUTHIER. Yes.

Mr. NORWOOD. What kind of car was that.

Mr. GLAUTHIER. It is also a General Motors car. It is a Cadillac, actually.

Mr. NORWOOD. Oh, my word. How nice.

Mr. GLAUTHIER. It was there before I got there.

Mr. NORWOOD. Actually, in my other life I used to drive Cadillacs, too, before I got up here in this business. Those suckers use a little gas, but they are nice.

My question really is, do you agree with Mark over here, he was here the other day—Mazur, is it not, Director of Office Policy. Mark agrees with the President, and I am just curious if you do; are you all right with \$2 a gallon gas? The President thinks it is pretty good.

Mr. GLAUTHIER. I think the President is trying to do what he can to bring that price down.

Mr. NORWOOD. It is confusing, because he said he thought it was pretty good. It is good for conservation; people can't afford it, so they won't drive.

I want to know how you feel about that, just a personal question, particularly with that Cadillac. I am worried about that gas mileage.

Mr. GLAUTHIER. We did car pool. There were five of us in the car.

Mr. NORWOOD. Very good. We can divide it up between five; that will help.

Mr. GLAUTHIER. The President's announcement last Saturday was a very specific set of activities to help bring prices down. He is very concerned about consumers and the public.

Mr. NORWOOD. Well, what has me so concerned, he says—I am only quoting the man; I am not trying to put words in his mouth—so he says he is concerned about the fact that if this gas can cost a lot and none of us can afford it, think how great that is for the environment. That is what he says now. I know, what you say he is saying now, of course, after the truckers were in town and all that.

Do you agree with the statement that he made 3 or 4 weeks ago, that "Isn't this great, it is going to get to \$2 a gallon?" and I will give you the exact quote if you are offended by how I am paraphrasing it.

Mr. GLAUTHIER. Well, I think it is the characterization. There is one effect of high prices; that will be increased incentive for conservation. That is certainly true.

Mr. NORWOOD. Secretary, I love you. Yes or no, do you agree with the President?

Mr. GLAUTHIER. I agree with the President.

Mr. NORWOOD. You are okay with \$2 a gallon of gas?

Mr. GLAUTHIER. I agree with whatever the President said.

Mr. NORWOOD. Give me that exact quote so we can get it in the record, so I am sure I don't mistreat you in any way.

[The information referred to follows:]

Now, on the other hand, Americans should not want them to drop to \$12 or \$10 a barrel again, because that puts you in this roller coaster environment which is very destabilizing to the producing countries and not particularly good for our economy, and takes our mind off our business, which should be alternative fuels, energy conservation, reducing the impact of all this on global warming.

Mr. NORWOOD. I want to now get to the rest of my questions. By the way, Volkswagen is low on gas mileage.

I would like to direct the bulk of my questions, what time I have left today, toward the disposition of nuclear waste, and I assume you are familiar with the bill that came out of the House, the one my good friend from Michigan called a "turkey," which really he was bragging on it when he said that, because he knows how great that bird is. But my question to you, and this is for your opinion, will the President sign that bill?

Mr. GLAUTHIER. I think the indications are that the President is probably not going to sign that.

Mr. NORWOOD. Could you tell us what is the problem now?

Mr. GLAUTHIER. Well, I think the most specific concern is the authorities that are taken away from EPA in establishing the right protective standards for groundwater.

Mr. NORWOOD. How come we didn't work that out 3 years ago, when Mr. Dingell was helping us and many Democrats were helping us try to find a solution to the problem.

Mr. GLAUTHIER. Well, there has been an ongoing series of discussions over the years, and 3 years ago there were a lot of other issues on the table as well. We are now at the point where we are going to complete the science on this facility this year, this calendar year, and we are going to be in a position to actually see a recommendation finally go forward on the suitability of the site next June, June of 2001, to the President. We are finally at the stage after 1 year of being on the threshold of seeing a decision made on a permanent site.

Mr. NORWOOD. Well, we don't want to rush into this, that is true.

Would you mind just submitting in writing at some point in time, like in the next couple of weeks, exactly the reasons the administration can't sign that bill?

Mr. GLAUTHIER. Be happy to do that.

[The following was received for the record:]

The Administration has consistently and clearly stated its position on S. 1287, the Nuclear Waste Policy Amendments Act of 2000, and similar legislation. The Administration opposes this bill because it would infringe upon and restrict the Environmental Protection Agency's existing authority to establish standards to protect public health and safety and the environment from radioactive releases. Therefore, it is unacceptable to the Administration. The bill passed by the Senate would be a step backwards because it would limit the Environmental Protection Agency's ability to exercise its existing authority until June 2001. The Agency's current intent is to issue a final standard during the summer of 2000 so that it will be in place well in advance of the Department of Energy's decision in 2001 on the suitability of the Yucca Mountain Site. As stated before, the Administration would oppose S. 1287 for these reasons and, if presented to the President, it would certainly invite a veto.

Mr. NORWOOD. Why it is that the Department of Energy objects so to Yucca Mountain as an arms storage site?

Mr. GLAUTHIER. We would like to focus on this site as a potential permanent repository site and do not want to see anything that is going to deflect from our ability to complete that successfully. That has been one of the concerns in the past, if we preempt the decisions by forcing or making a premature decision on interim storage. Let us focus on the permanent decision first; let us make that, and then let us come back and explore what else might be done once that decision is in place.

Mr. NORWOOD. You could hardly call any decision we are making premature, we have talked about this an awful long time. What precisely is the problem? I mean, isn't that a perfectly good place for interim storage?

Do you know something the rest of us don't, that it wouldn't make a good place for interim storage?

Mr. GLAUCHIER. We have been concerned about interim storage anyplace. We are concerned about the funds being focused on completing the work for the permanent repository, the amount of money we have. We have not gotten the full budget requests that we have made the last couple of years. The amount of money we have is just enough to keep us on schedule for this decision to go to the President next June.

We are concerned about the requirements to move on into licensing. Anything that we do that will move us onto another path, even to divert a portion of those funds, is going to have an impact on the ability to get this permanent repository finished.

Mr. NORWOOD. What did you mean, that you are concerned about interim storage anyplace? What does that mean?

Mr. GLAUCHIER. Well, you mentioned Nevada. Our feeling is that if we were to construct an interim storage facility, a new facility anyplace, that would, I think, have the same concerns that I cite about diverting funds, of having an impact on the ability to complete the permanent repository on schedule.

Mr. NORWOOD. Do we have pretty good science indicating Yucca Mountain is a good place?

Mr. GLAUCHIER. We have no show-stoppers at this point. This is all on track.

Mr. NORWOOD. How is your science regarding interim storage in Aiken County, South Carolina; Burke County, Georgia? How are we going there? What does the science indicate about the interim storage that we do have going on.

I think there are 70 other places around where there is interim storage going on. What is the science telling us about that?

Mr. GLAUCHIER. My comment a moment ago was with respect to a centralized interim storage facility. We do have materials stored at numerous sites throughout the country. We are concerned about that, and as you know, we have a proposal that we have offered to the utilities for the Federal Government to take responsibility for the fuel of those sites.

Mr. NORWOOD. We made that proposal years ago didn't we when we started taxing Georgia ratepayers we made that deal a long time ago. In fact, we have spent a half a billion dollars, sent it up here to you for you to take responsibility.

So we thank you making the offer to take care of our interim storage, but you know, you are supposed to do that now. I have forgotten how much, 7 billion in all has been sent over there to you to take care of that interim storage; and when you make a decision to play politics with Yucca Mountain, what you are doing is saying, in effect—at least a common-sense reading of it—it is perfectly fine to have interim storage in Aiken County, South Carolina—no sweat, no danger, we have got the science, but we have got to study Yucca Mountain one more time.

Now, that is what you are saying when you are playing games with this Yucca Mountain thing that Democrats and Republicans, both sides of the aisle in both bodies in Congress, want you to get moving on. I want exact, detailed lists as to why, one more time, you have moved the goal post on Yucca Mountain.

Will you do that for me, sir?

Mr. GLAUCHIER. We will be happy to submit the response. The schedule will run, it is the same schedule we have been on for the last 5 years at least, getting this suitability assessment done, based on the science.

[The following was received for the record:]

Since 1993, this Administration has been unwavering in its commitment to complete the rigorous world-class scientific and technical program necessary to evaluate the suitability of the Yucca Mountain site for a repository in a timely manner. We are nearing a decision, expected next year, on whether the site is suitable and should be recommended for development. The Administration's Fiscal Year 2001 request for the Program is critical to reaching these decisions and, if appropriate, proceeding forward to begin emplacement operations at Yucca Mountain in 2010. This has been the Department's published schedule since 1989.

Mr. NORWOOD. We catch onto what you have been doing. I promise you, we catch onto how long you have been taking, and how much this is going on, and how we can never quite get there under this administration because when we come to an agreement—and I mean, between my pal, John Dingell, and this administration, we have got, well, we just can't quite sign that bill, we have got to do one more little thing here.

And you know what, January will be here before you know it. It will get here quick, and I am telling you guys, you have an opportunity to do the right thing.

Now, I know you can't make the man sign anything, but you darn sure ought to be making a legitimate argument as to why the interim storage in Burke County, Georgia, is not safe. And I have crawled through that hole in Yucca Mountain that we have spent I have forgotten how many billions on, and I don't blame them for not wanting it in Nevada. I wouldn't want it either. But that is where it needs to be, and you guys need to help get it moved.

I see my time is up, Mr. Burr. I know you are just squirreling over there, big time. So with that, I will refer to you so you can catch a flight.

Mr. BURR. I was just mesmerized by the gentleman's line of questions.

Mr. NORWOOD. You get another 2 minutes.

Mr. BURR. Clearly, you are only going to have the Chair for another 30.

Mr. NORWOOD. I see that. Well, the chairman will back me up.

Mr. BURR. Again, welcome, Mr. Secretary.

One of the things we as Members of Congress try to do as we try to find solutions to others' problems—I would suggest to Mr. Strickland that the fastest way to address this problem in Ohio is to go to your local paper and tell them to hire the reporter from the Paducah paper, who put the pressure—public pressure on the Congress and on the Department of Energy to look at a horrendous problem in Kentucky, and ultimately, the Department of Energy responded to a number of different pressures.

I hate to make it that simplistic, but it is not just coincidental that that one reporter who broke that story has led to a tremendous amount of work by this subcommittee and a reaction from the Department of Energy.

Mr. STRICKLAND. Can I respond to you?

Mr. BURR. Please do.

Mr. STRICKLAND. If I hadn't run out of time, one of the questions I was going to direct toward the Deputy Secretary was, would the response have been different if the Washington Post had decided to run a series of stories on Piketon, Ohio, instead of Paducah, Kentucky, and I just did haven't time to direct that question.

Thank you so much.

Mr. BURR. We think a lot alike.

Mr. Secretary, let me talk to you just very briefly about the deregulation and, specifically, the stakeholders group, because I think it is unclear as to exactly what the participation of the Department of Energy was and the organization and coordination of the group. So, if you will, tell me, was the Department of Energy the nucleus behind the creation of this stakeholder group to look at electricity deregulation?

Mr. GLAUCHIER. The Department has helped to facilitate the meetings of that stakeholder group. I don't believe that we actually created this stakeholder group.

Mr. BURR. Did the DOE invite the attendees?

Mr. GLAUCHIER. We did to at least a couple of the meetings, yes.

Mr. BURR. And what criteria did the Department use to determine who the invitees would be?

Mr. GLAUCHIER. It was based largely on an earlier meeting that the Secretary had had with a group of people who were interested in restructuring.

Mr. BURR. So the Secretary picked them?

Mr. GLAUCHIER. It kind of grew out of that meeting.

Mr. BURR. Did this stakeholders group ever meet at the Department of Energy or a Department of Energy facility?

Mr. GLAUCHIER. Yes, yes, they did.

Mr. BURR. And was there any need for something like that? I show my ignorance. Is there any need for any type of public notification of that?

Mr. GLAUCHIER. No.

Mr. BURR. Is there any reason that you are aware of as to why somebody from this committee—Republican, Democrat chairman, ranking member, wasn't included in the stakeholders group?

Mr. GLAUCHIER. I believe that it was a systematic attempt to try to form a group that would represent all points of view and make sure that everybody was represented.

Mr. BURR. So it was just to get one point of view and consensus in one direction on deregulation?

Mr. GLAUCHIER. I think the idea was to try to get ideas formulated to get a more—

Mr. BURR. Well, we tried that too and we got together, Republican and Democrat members, and Rich was kind enough to come. And it is through those meetings—our door was open; it was a pretty public process that we went through. We invited people from outside that we perceived to be experts to come in and educate us

on what they thought the direction is that we should head, what the effects of certain things were.

We worked through that process and were able to pass a subcommittee bill. It didn't have unanimous consent; it did have bipartisan support and was a very important first step to the process.

Now, as we are going through that process, the Department of Energy has a parallel effort at the creation of a stakeholders group, that meets at the Department of Energy facilities, that was picked by the Secretary to try to determine the direction of electricity deregulation; and Congress wasn't invited to participate.

Is there a problem with that as it relates to how you look at it?

Mr. GLAUCHIER. My understanding is that the staff of the committee were briefed on those meetings.

Mr. BURR. Were they invited?

Mr. GLAUCHIER. No, I don't think they were.

Mr. BURR. I mean, we invited Rich. I don't think—

Mr. BARTON. Would the gentleman yield?

Mr. BURR. Be happy to.

Mr. BARTON. The subcommittee chairman wasn't briefed on these meetings; in fact, the subcommittee chairman found out about it through the rumor mill, so if you are briefing somebody up here, it is not on the majority side.

Congressman Boucher and Hall are not here. Perhaps they were briefed, but I think if they had been briefed, they would have told me because we have got a very positive relationship. I don't mean to take the gentleman's time.

Mr. BURR. I appreciate the chairman's clarification.

This member was not briefed, as well, but this member felt like he knew everything that was going on at the stakeholders meeting, because it was reported in the press pretty aggressively—not necessarily that there was an open process going on, but that a group had gotten together to aspire to a certain direction for electricity deregulation.

It is not that there is anything wrong with that, but I guess my question is, when Congress can have an open process, is it right for the Department of Energy to have such a closed and secretive process to try to achieve a policy decision?

I mean, the last time I remember, this had happened on health care and America was not real happy about it; and I think if America knew about this, they wouldn't be real happy about it.

Are you happy?

Mr. GLAUCHIER. If I might, Congressman, this effort that we have undertaken has been only to try to help provide more ideas, more dialog, going into the debate that was going to occur here in the Congress.

Mr. BURR. The debate was taking place, Mr. Secretary. If you had wanted it to be in addition to the debate we were having, we would have been included. We have had over 30 public hearings, both sides of the aisle, in this Congress on electricity deregulation—not counting the open meetings that Rich sat in. And I think Rich—correct me if I'm wrong—we had White House representatives in those meetings. Just because they didn't agree with some of the points we talked about, we didn't ask them to leave, and we

never locked the door, and we never excluded anybody who asked to come and testify.

Now, granted, I never asked to come to the stakeholders meeting, but that was primarily because nobody asked me if I wanted to. Do you think that is wrong? Is it wrong what the Department of Energy did as it related to the stakeholder group?

Mr. GLAUCHIER. I think that the impression that has grown out of this is much stronger than what was intended at the time. The intention was to get ideas on the table that would go into a process that—we are not even expecting that this group of ideas will be the Department of Energy's position. It is, rather, other ideas that will go on in the discussion. We look forward to working with the subcommittee and the full committee now to continue the discussion and move legislation forward.

Mr. BURR. I talked earlier about my business background. The way that you prepare to work with people is not to exclude them from your own internal processes; it is actually to reach out and include them, and I thought that was what the chairman was doing when Gingrich and others from the White House sat in the room and brought their ideas, had the opportunity to participate in the discussion, and the minority to bring people in as well, that might talk about what they were doing.

Let me move on because my time is up. I just want to ask one last question.

Mr. BARTON. This will have to be the last question.

Mr. BURR. Yes or no answer, do the current level of gas prices lessen the economic impact if we were to adopt the Kyoto protocol?

Mr. GLAUCHIER. I am not sure that I can give you a simple yes or no.

Mr. BURR. Let me refresh your memory. One of the issues raised in the Senate was—when Kyoto was first proposed, and we agreed, and it came back to the Senate, and they began to have debates, we were at 88, 90 cents a gallon; and one of the specific points that was made was that if you adopted the Kyoto Protocol, the gas would go to \$1.50.

Now that gas is at \$1.65, it is easier for people not to look at the gallon of gas as a reason and, in fact, the economic impact is less if gas is at \$1.60 and Kyoto would only force it to \$1.50.

Mr. GLAUCHIER. I am not sure, and I don't believe that the cost impact, economic impact of complying with the Kyoto Treaty would change. What it does is, it provides incentives for people to move to other strategies.

Our cost estimates have been that complying with the Kyoto Treaty will be modest overall, that if it is done in a way that provides flexibility, emissions trading, things of that sort, that there will not be significant economic dislocation.

The projection of the gas prices you referred to are not a part of the policy positions, but rather some people's projections of what might happen.

Mr. BURR. Potential economic impacts of feeling. I thank you, Mr. Secretary.

And I thank the chairman and Mr. Strickland for their patience, and I would yield back.

Mr. BARTON. Mr. Whitfield. And before you start Mr. Whitfield, do you have a plane to catch today?

Mr. WHITFIELD. No, I yielded to Mr. Burr because he said he had a plane to catch.

Mr. BARTON. Well, Mr. Strickland has some additional questions, so I am going to stay here till about 12 to 12, and then I am going the turn the Chair over to you for such time as you may consume to ask questions, so that Deputy Secretary—you are recognized for 7 minutes now for questions.

Mr. WHITFIELD. Mr. Chairman, thank you very much. And Mr. Strickland raised an interesting issue earlier, and obviously, I am delighted there is legislation affecting the Paducah plant. There is going to be more legislation prepared and there has been some prepared. But let me ask you this question.

Considering the fact that we had Department of Energy sites all over the country manufacturing various weapons systems and material for bombs and so forth; and that employees throughout the country who, in many instances—were unaware of the types of material that they were dealing with and many of them have suffered and incurred serious illnesses as a result of that, don't you think that the U.S. Government should have a policy of adopting a program to compensate these employees for verified illnesses that they incurred while working at these plants?

Mr. GLAUTHIER. Yes, Congressman, we do and that really is the underlying position under the various proposals, the proposal we did offer in the fall and the ongoing work now to try to get a basis to act in some way that is equitable and fair to all the workers.

Mr. WHITFIELD. And obviously, I think one reason it has taken a long time to even get to this point is because we are talking about World War II on and even prior to that. So for many, many years we have had all these people out there who have incurred various illnesses without any compensation whatsoever for this, unless there was some State Worker's Comp program. I know that one of the reasons, obviously, we don't have a Federal program has just been the cost.

But I think as this administration and others step up to the plate to settle discrimination lawsuits, just like the \$538 million for discriminating against women at the United States Information Agency, the government is going to have to step up to the plate and say, at whatever the cost, we are responsible for this; you did not know what you were dealing with, and therefore we are going to have to make you whole.

I think that we have an obligation to do that, and we are going to have to do it. Do you agree with that?

Mr. GLAUTHIER. Yes. And Secretary Richardson has tried to be very forceful in making that proposal. The legislation that we did propose for Paducah is premised exactly on that, and that is what we hope to continue to do as we move to Piketon and the other facilities.

Mr. WHITFIELD. And we are in the process of preparing legislation that will affect a lot of sites around the country and people who have experienced these same things. So we look forward to working with you all on that as we go along.

Now, Senator McConnell and I, as well as Congressman Strickland, passed legislation in the Congress that a conversion facility would be built at the Paducah and Portsmouth sites to take care of this uranium hexafluoride, and I noticed in this year's fiscal year 2000 budget there is \$22.9 million requested, and of that, I guess about half of it goes to maintain the cylinders in which this is stored and the other half is going to entice companies to give their proposals on bidding a facility.

Now, it is my understanding that within the Department there are many people who are opposed to these conversion plants. Am I accurate in saying that, or could you tell me exactly what is happening over there as far as the policy of developing these conversion plants?

Mr. GLAUCHIER. Yes, thank you. I would be happy to do that.

I think the confusion, perhaps, about these plants has been the question of what schedule they are on; and there was discussion last year, the middle of the year, about an accelerated schedule, and the proposal had even been RFP'd, had been drafted and circulated, which would have put things on a very fast track. And then, in reviewing it in the fall, we decided—and I led the process—to make the decision that that schedule was not going to be successful, that we were getting ahead of ourselves in a way that unfortunately has been too traditional in DOE projects. As a result, what we have done is to focus on characterizing the wastes, to be able actually to do samples of the materials in those containers, to be able to do environmental sampling of the sites as well, so we will have a solid basis, a technical basis for proceeding; to get the design process laid out in way that we will be able to then proceed, have the proposals go out, the request for proposals be issued by October 1 of this year, have those proposals come back in and be able to build these successfully, so we will have the technical basis, the design basis to be able to proceed to full design construction and operation that will be successful and will be able to be followed up.

Our earlier path, I am afraid, was not going to have resulted in the success of the project.

Mr. WHITFIELD. So there is no question that the technology is there to do this; is that correct?

Mr. GLAUCHIER. That is correct, although we do need to know exactly what constituents are in those tanks so—we found in some of the sampling recently, at least one case where there was something in one of the cylinders that was not expected, and it would require a slight change in the treatment technology that is used. So that is the kind of reasoning that has led us to this.

Mr. WHITFIELD. Now, let us say that you do this sampling which is ongoing and you discover that there is contamination there, there are transuranics, whatever, that is pretty widespread.

Is that going to change your opinion on whether or not you should proceed with conversion plants?

Mr. GLAUCHIER. No we don't expect that. We want to be sure that the treatment technologies and the sizing is done exactly right, so it will accommodate the range of actual technical levels of contamination levels that we will find. That is the focus.

Mr. WHITFIELD. And when do you anticipate the sampling will be completed?

Mr. GLAUTHIER. Most of it, I think, will be completed by September. We have sampling going on right now. In some cases, it takes several months for the final results to be available.

Mr. WHITFIELD. Now, and you said October 1 you would hope to have an RFP. Now, do you believe that 12 million is enough to entice a company to come forth and reply to an RFP or submit a proposal?

Mr. GLAUTHIER. I think it is the appropriate level to show that the Congress is supporting these projects on the track that is necessary, and that if Congress does appropriate those funds and supports this effort, that firms will come forward, yes.

Mr. WHITFIELD. So if we added additional money to that, you would not be opposed to that?

Mr. GLAUTHIER. It depends on where it comes from, Congressman. Our concern is, of course, that we keep our other priorities in place, too.

Mr. WHITFIELD. Okay.

Now let me ask you, on your supplemental—

Mr. BARTON. Let this be the last question in this round. We have Congressman Markey here. I want to introduce him to the committee properly, and then I have to leave and go to the airport; but go ahead and ask this question.

Mr. WHITFIELD. In your supplemental, there was \$26 million—so much for environmental cleanup, so much for medical monitoring which was approved. Now, it is my understanding that you had made another effort at some timeframe to obtain another \$11.2 million for the Office of Worker and Community Transition Assistance, which was not granted by either the staff or whatever. Why did you not make that request within the \$26 million; that \$11 million, why did you not add that on at the original time?

Mr. GLAUTHIER. I am not sure that I follow all the individual pieces that you have got. We do have another \$12 million that will be going to the program from funds that were in the memorandum of agreement that was executed at the time of the privatization of USEC.

Mr. WHITFIELD. Well, it is my understanding that in the supplemental there is a \$26 million supplemental for this cleanup and worker transition, and that people went to the Committee on Energy and Water and wanted another \$11 million on top of that, and that that didn't make it through; and I was wondering why it was submitted in separate pieces.

Mr. GLAUTHIER. I believe the additional piece you are talking about is worker transition funding?

Mr. WHITFIELD. Right.

Mr. GLAUTHIER. And what we have been trying to do there is to continue to look at what we can do to try to deal with the expected layoffs that will occur this summer. We have, as you know, additional money in the cleanup portions of the budgets in our environmental management budget. We have been trying to husband those resources so that that money can be used this summer to help bring about increased hiring at the same time that the other layoffs may occur. We expect probably on the order of 400 or more

workers to be able to be hired this summer, and then if our request is funded, the 2001 request, by October, we would have an additional amount of hiring that could be done.

Mr. WHITFIELD. Thank you, Mr. Chairman.

Mr. BARTON. Thank you. Mr. Whitfield, if you will begin to move this way to take the chair, I am going to have to run to the airport.

The Chair would ask unanimous consent that all members not present have the requisite number of days to put their opening statements in the record if they so desire. Is there objection to that?

Hearing none—

Before I leave, Mr. Secretary, I want to point out that when we did this hearing last year the staffs on both sides sent written questions as follow-up and we had to close the official record without ever receiving replies to those written questions, and we kept the record open for 6 months. So we are going to be a little bit more pushy this year.

We are going to send you the written questions within the next 2 weeks, and we would hope that you would get us written responses within the next 2 weeks after that. Do you think that—

Mr. GLAUCHIER. We will work to be as responsive as we can. We will do it quickly, and it is certainly not our intention to have things drag out. So we will work to try to do it that quickly.

Mr. BARTON. We won't send you questions with multiple choice answers. You will have to do some thinking to answer them, but hopefully they can be answered in the timeframe.

And the other question I am going to ask that you really think about for the record: Mr. Norwood asked a number of questions on the nuclear waste fund. I am not going to repeat that, but we simply have to have a responsible solution from the administration on the funding profile. You know and I know we can't build the thing if we fund it around \$400 million a year when, within the next 3 years, it is going to cost over a billion dollars a year for construction.

I mean, you have got to—we will work with you on a bipartisan basis if the administration, Department of Energy, will present us with realistic funding requests for the depository. I mean, we just got—you know, it is beating a dead horse, but the House bill did that. The Senate bill doesn't do that.

Having said that, we simply have to move forward on that.

Mr. GLAUCHIER. We do need to work together. Thank you.

Mr. BARTON. The Chair is going to recognize the distinguished gentleman from Massachusetts, who has joined Mr. Burr in observing a tieless subcommittee hearing. And I have already informed the distinguished gentleman from Massachusetts that I was less than enthusiastic about his idea of the refined product reserve in the Northeast, but I am sure, since he is going to get the last word, he will reinforce the need for that with our distinguished Deputy Secretary. Mr. Markey is recognized for 7 minutes; then we are going to have second round of questions that Mr. Strickland and perhaps Mr. Whitfield will want to continue.

Thank you for being here.

Mr. MARKEY. We kind of have this disagreement over what is a national emergency. The Sandinistas are coming up the Rio Grande

toward Texas; that is a national emergency. If there is a hurricane in Texas and 20,000 people lose their homes and there is \$200 billion worth of damage, that is a national emergency—not a regional emergency; the President declares it a national emergency.

But if 67 nations get together at the prime minister or sheik level and decide to cutoff home heating oil supplies for the northeastern part of the United States, that is a regional emergency, not a national emergency.

Now, the fact of the matter, that the rest of the Nation doesn't use home heating oil, is really not relevant. In fact, using that kind of an argument, if the lower 48 States were all cutoff, but Alaska had plenty of oil, you wouldn't have a national emergency by definition, because you hadn't hit every State. So, you know, some people look at this definition of "national emergency," and somehow or other you have to hit every single State or it is not a national emergency.

Now, that, of course, would be a very narrow-minded view of defining what constituted a national emergency. That would actually be a pretty stupid way of dealing with it. So we think that the administration has the ability to deploy a regional petroleum reserve, using the existing language.

Do you agree?

Mr. GLAUTHIER. Yes. The President in his announcement last Saturday asked the Congress to move forward and authorize a reserve, but also reserved the right to do it under existing authorities if the Congress doesn't act.

Mr. MARKEY. Do you agree, as well, that the President has the ability to deploy the Strategic Petroleum Reserve? If 3 million barrels of oil is removed from our energy supply, is that a national emergency? How many barrels would it take?

Mr. GLAUTHIER. That is a good question. I am not sure we have a specific number threshold.

Mr. MARKEY. If I am paying \$1.70 for gasoline and I should be paying only \$1.20, have we reached a national emergency yet? Or is it \$2 or \$2.20? Is it 5 million barrels that they have withdrawn?

When do you reach a point where it is a national emergency, or does the President always reserve the right to make that decision, notwithstanding what other parts of America might say? What is the testing mechanism?

Mr. GLAUTHIER. The only basis of the law currently, for acting to withdraw oil from the Strategic Petroleum Reserve is a supply interruption.

Mr. MARKEY. Right. Do you consider, when four or five governments get together, who control the oil supply to our Nation, and at the government level, they decide to interrupt our supply in the normal course of, you know, international commerce, a supply interruption—and cutoff 3 million barrels?

Mr. GLAUTHIER. It is different from the kind of supply interruptions I think were anticipated originally. The question that would have to be addressed is, how long is the interruption going to last, and what are the steps that are possible to be taken?

Mr. MARKEY. What were the original supply interruptions that we anticipated? I was here on the committee throughout the 1970's, and what we were talking about was four or five governments

going into a room and saying we are going to cutoff X amount of supply. There wasn't a war, in other words; it was strictly an economic decision. Is that what you are talking—aren't we in the exact same circumstance we were in in the 1970's?

Mr. GLAUTHIER. We are in a similar circumstance. The question is, how long will this last, will there be changes made? And of course, Secretary Richardson is doing everything he can to bring about an increase.

We expect to revisit the question about the Strategic Petroleum Reserve after hearing next week's decision of OPEC and we understand in the context of that decision what kind of an interruption may be continuing.

Mr. MARKEY. I guess the question that I am asking is that if the existing conditions continued is that, in and of itself, sufficient to justify an emergency being declared, if there were no changes of circumstances whatsoever?

Mr. GLAUTHIER. That has been discussed. There has not been a firm decision made within the administration on whether or not—

Mr. MARKEY. How many barrels would it take? What is the range? Can you give us a range? Is 3 million not enough? How many would it have to be?

Mr. GLAUTHIER. We do not have any quantified criteria established.

Mr. MARKEY. You can't define it, but you will know it when you see it? Well, that is good. I will tell you why that is good, because that means it is a no-standard standard; and that means that, you know, whatever the President decides becomes the standard in terms of what an emergency is and is, as a result, unchallengeable, since it is in the eye of the beholder if you don't have an absolute standard.

Now—so would the President need us to authorize specific language in order to construct a regional reserve or can he do it without?

Mr. GLAUTHIER. Well, he has asked to have it authorized specifically, because I think that would be preferable to do this the right way. If the Congress does not act—

Mr. MARKEY. If we don't act in the next couple of months, is he going to—does the administration plan on authorizing a process to be put in place so that the residents of the Northeast know for this coming winter that something will be in place?

Mr. GLAUTHIER. My expectation certainly is that we will act under existing authorities if the Congress does not proceed.

Mr. MARKEY. Is it your intention to have something in place for this coming winter?

Mr. GLAUTHIER. Yes, it certainly is.

Mr. MARKEY. Okay. How important is it to the administration that the Strategic Petroleum Reserve be authorized under EPCA?

Mr. GLAUTHIER. We are asking the Congress to act. As you know, the authorization expires at the end of the month. We would like to get a simple extension of a year, so we can work together on the broader questions about the reserve.

Mr. MARKEY. What would be the consequences of a failure to reauthorize EPCA?

Mr. GLAUTHIER. It makes some of our other authorities—potentially, it will be challenged.

Mr. MARKEY. Do you think we should authorize the regional petroleum reserve in spite of EPCA?

Mr. GLAUTHIER. As part of?

Mr. MARKEY. As part of reauthorization.

Mr. GLAUTHIER. What we are asking for right now is the simple extension.

Mr. MARKEY. I am talking about the regional petroleum reserve now.

Mr. GLAUTHIER. I think we need to work together on language that will constitute the regional reserve.

Mr. MARKEY. Would you like us to do that in EPCA?

Mr. GLAUTHIER. Yes, that would be the logical place to do it.

Mr. MARKEY. Okay. Now, in his radio address on Saturday, the President said he did not want a regional petroleum reserve to have adverse environmental impacts. Could you detail for us what those potential environmental adverse impacts might be?

Mr. GLAUTHIER. Well, I think all the impacts that could be associated with the storage of products, heating oil products, our expectation is in order to do this quickly, we would use existing storage facilities so we would not be trying to site new facilities or construct new ones.

Mr. MARKEY. What would be the issues surrounding the use of existing facilities?

Mr. GLAUTHIER. I think the transportation of the fuels, the storage and all, we want to be sure whatever facilities we use will meet all the appropriate standards and—

Mr. WHITFIELD [presiding]. Your time has expired. If you would like to ask one more question and if the Secretary has time, we are going to do one more round.

Mr. MARKEY. I have one final question. Then I thank you, Mr. Chairman. In your testimony and in Chairman's Barton's remarks, you endorsed the concept of new triggering language that would allow oil to be released from the regional reserve in response to a regional emergency or a price hike. Has the administration developed legislative language on this matter?

Mr. GLAUTHIER. We are working on it. We don't have the language actually developed now. But we are working on it and would like to get it done quickly.

Mr. MARKEY. Could we get it—what is your time line for getting us language?

Mr. GLAUTHIER. We would like to work over the next couple of weeks to do this.

Mr. MARKEY. We are moving to the EPCA reauthorization next week. Could you do it over the weekend like it was an emergency that had to be dealt with for the northeastern region of the country? Is there someone who could work over the weekend?

Mr. GLAUTHIER. Let's see if we could work with your staff to come up with the language next week.

Mr. MARKEY. Just coming up with one sentence or two. We should be able how to do that before the markup.

Mr. WHITFIELD. We appreciate your time this morning. If you have about 12, 14 more minutes, we would like to go around one more time.

Mr. GLAUTHIER. For you and Congressman Strickland, of course.

Mr. WHITFIELD. Thank you so much.

Mr. MARKEY. Any port in a storm.

Mr. GLAUTHIER. If it was the Congressman from Massachusetts.

Mr. WHITFIELD. Mr. Strickland, why don't you proceed for 7 minutes.

Mr. STRICKLAND. Thank you, sir. Mr. Deputy secretary, I stated in my opening remarks that I was having some questions this morning that may pertain to the privatization of the enrichment industry. And at this point I would like to ask if you know when the administration will be releasing its report to Congress addressing the effect of the Russian HEU agreement on domestic uranium mining, conversion, and enrichment industries, and the operation of the gaseous diffusion plants. This report is required under the 1996 Privatization Act and should be reported to Congress not later than December 31 of each year. I have yet to see such a report and I would expect the Department of Energy would contribute significantly to such a report. Can you tell me if such a report exists and when it is likely to be available?

Mr. GLAUTHIER. Well, I can report that the report you are talking about is in draft form. It is in review within the administration. I do not have a specific date when it will be out. But there is an active effort going on to try to complete that and get it to you soon.

Mr. STRICKLAND. Would you please do everything that you can under your influence and power to make sure that that report is available to us as expeditiously as possible. Since apparently it was due on December 31.

I want to preface my question with some observations. We privatized our enrichment industry, and I believe the government received something approximating \$1.9 billion out of that transaction. Shortly thereafter we were required to appropriate some \$325 million as a direct result of privatization. And I am sure you understand what was involved in that dealing with the Russians and the natural uranium.

In the meantime, either jobs have been lost or renounced totaling somewhere in the vicinity of 1,500 jobs at the two sites. The company, the privatized company, is now estimated to be worth somewhere in the range of \$400 million. My understanding is they are carrying about a \$500 million debt.

I had a meeting with the national, or the Nuclear Regulatory Commission a couple of weeks ago. They told me that they are in the process of doing an analysis which they hope to have done by perhaps June in which they will try to determine if this private company is capable of doing what it must be do statutorily, and that is maintain a reliable and economic domestic source of enrichment services. They use the phrase Catch 22 when they were talking about their obligations to make this determination in order to continue to license this company to continue to operate this industry.

Many people think that this industry is facing bankruptcy. I received a call this week from Dr. Thomas Neff, who purported to be

the father of the arrangement with Russia to purchase materials from their nuclear arsenal. And I asked him point-blank if he thought the best thing for the security of this Nation, both in terms of our national security and in terms of our economic security, was to think about the possibility of this government once again taking control of this industry, purchasing it back, however that could be done. To me that, in his considered opinion, that was what would likely be the best scenario.

And I say that leading up to this question. Obviously this industry is in difficult straits. My office and other offices have been getting calls from individuals who are representative of the debt holders, there are questions about the, management of this industry, what its long-term strategies are. Given the importance of this industry to the energy needs of this Nation, and as I said a little earlier, some people think this industry would be worth more dead than alive, in other words, to actually cease the production of the enrichment facilities, sell off the contracts and God only knows, what would happen as a result, but what I want to ask you is what is the department doing to address the energy security needs of this Nation in terms of our enrichment capacity considering NRC's concerns? And I can tell you, I talked with Treasury within the last several days and much of what they said to me was their statutory responsibilities and obligations are pretty much over once privatization occurred. So I guess that leaves the responsibility in the hands of the Department of Energy. And what is the Department doing in terms of the vulnerability of this industry and trying to make sure that our security needs are attended to?

Mr. GLAUTHIER. Congressman, we do feel that we need a domestic source of enrichment capacity in this country. We need that for both commercial power plants, and of course for our national security needs in case we need to enrich material again for our weapons stockpile and for our naval reactors.

The question on our mind in this regard is the long-term question for U.S. enrichment corporation. They have the facilities in your districts now, but those facilities are old, they are very energy intensive. The electricity contracts that they are operating under are going to expire here in a couple more years.

So we have been concerned about what their long-term plan is going to be. Ever since they decided not to go forward with the Atlas technology, our technical staff and our nuclear energy program, our R&D program at the Department has been working with the U.S. enrichment program over the last few months to share with them the technical information from our work on different enrichment technologies. And the USEC people have been looking at whether or not they might use one of those technologies as a basis to go ahead and build a new production facility to help become more competitive in the long term. We want to support that. We hope that it will be possible for them to do something that maintains a competitive position in the marketplace, maintains a strong domestic capability, and uses the best technologies.

Mr. STRICKLAND. Mr. Whitfield, can I ask one quick follow up question?

Mr. WHITFIELD. Sure.

Mr. STRICKLAND. And this is an effort to get your personal opinion. Given the history of privatization, given the fact that I was told and I think others were told that the reason the IPO privatization process was the most desirable because that was the most—that was the way to have the greatest guarantee that Atlas would be pursued as the next technology, given the fact that they are now coming back to the Department of Energy apparently to get DOE expertise in order to make this industry viable in the future, was privatization—has privatization benefited our Nation? Your judgment?

Mr. GLAUTHIER. Well, I think the operations of running an enrichment facility did not have to be necessarily governmental. It is not inherently governmental. The question now is can the operation, in fact, formulate a long-term strategy that will really be a solid business basis to proceed in the future. It has several things going on in it right now. It has still a good book of business. It has the inventory that it has available. It has a financial position on which it can move forward if it can make decisions on a technology basis and formulate a plan and really move ahead. I think the jury is out.

We have go to watch and see where this will all actually go. We want to be as supportive as we can, and our technologies would be available to them or to any company here who would be interested in it.

Mr. STRICKLAND. One final follow-up. When we privatized the Avlos technology was valued at zero, my understanding is, in that transaction. They terminated the Avlos research and I may be wrong, but I have been informed that then they had a yard sale and sold off the lasers and other equipment, I guess, to their profit from an investment that had been valued at zero, but an investment that had consumed hundreds of millions of perhaps billions of tax dollars. It is—it is all so puzzling to me how these things have occurred. But I want to thank you for answering my questions and I thank you for being here.

Mr. WHITFIELD. Thank you, Mr. Strickland. As you know, Mr. Glauthier, the Oversight and Investigations Subcommittee of Commerce will be having a hearing around April 13 on the financial condition of USEC, because all of us, I think, are committed to maintaining a domestic production source for enriched uranium for national security reasons. And I think that that will be at a time when we can look into this in more detail as well. And I am delighted that Mr. Strickland raised that issue at this hearing.

I have just a couple of questions to close up here. As you know, both the Paducah and Portsmouth plants are scheduled to lose a total of 850 jobs, and we know that negotiations and discussions are going on with Bechtel Jacobs to move some of those over for environmental cleanup to minimize the loss of jobs. Those that will not have jobs through the transition will have a termination benefits package available for them. Have you, at this point, been able to determine how many employees you believe will not find a job at Bechtel Jacobs and will have to be terminated?

Mr. GLAUTHIER. I don't believe we have the exact numbers yet. We are still working actively with the organizations. We, as I said earlier, are hopeful that we will be able to increase our hiring in

the environmental cleanup program by 400 perhaps as many as 500 workers this summer. We are doing everything we can to maximize that and to try to make sure we can use what capacities we have to try to help mitigate their situation.

Mr. WHITFIELD. And do you have a date in which you think that decision will be made by?

Mr. GLAUTHIER. In terms of the numbers that you mean a better precision of numbers? I know the work is going on every week. It is a continuous effort. I am not sure if there is a target where we actually know. We will share the information with you as we proceed.

Mr. WHITFIELD. In your testimony, you talked about the proposed deferral of \$221 million in clean coal technology programs. Would you expand on that just a little bit.

Mr. GLAUTHIER. Yes. Because of the schedule, some of these plants or projects have not been able to proceed as rapidly as expected. This has been true for several years. A few years ago there were proposals to actually rescind funding that had been previously made available because the projects were behind schedule. What we have done instead is to propose deferring the funds so that they will still be available to complete the work, but they will be available in the years in which they are actually going to be needed.

Mr. WHITFIELD. But the department is still committed to researching and pursuing clean coal technology.

Mr. GLAUTHIER. That is correct. And we are supporting the projects that are still underway. I believe there are five that are under construction now and two more that will still need funding.

Mr. WHITFIELD. Okay. And would you provide us a list of those five. I mean I am not aware of where those five sites are and I would like to know.

[The following was received for the record:]

The Department of Energy's Clean Coal Technology Demonstration Program currently has five projects that have recently initiated construction or are preparing for the initiation of construction activities. These five projects and their locations are summarized below:

Project	Location
JEA Large-Scale CFB Combustion Demonstration Project	Jacksonville, Florida
Kentucky Pioneer Energy IGCC Demonstration Project	Trapp, Kentucky
McIntosh Unit 4A PCFB Demonstration Project	Lakeland, Florida
McIntosh Unit 4B Topped PCFB Demonstration Project	Lakeland, Florida
Clean Power From Integrated Coal/Ore Reduction (CPICOR)	Vineyard, Utah

Of these five projects, only the Kentucky Pioneer Energy and CPICOR projects have remaining funding requirements.

Mr. GLAUTHIER. One of the two, of course, is in Kentucky.

Mr. WHITFIELD. That makes it even better.

You have testified that DOE intends to meet its schedule for the Yucca Mountain repository. In making that statement and in the fiscal year 2001 budget submission, which radiation standard are you assuming will apply to the repository, the standard proposed by the NRC or the standard proposed by EPA?

Mr. GLAUTHIER. Well, of course that effort is continuing on to come to a final standard. We are evaluating the impacts of both the

standards and assuming that we could accommodate, whichever of those ends up being the final standard.

Mr. WHITFIELD. Now EPA is to issue their final standard later this year, and the Senate bill delays issuance of that final rule until June of 2001. In your opinion, what is the impact of that delay on your schedule?

Mr. GLAUTHIER. We will still proceed ahead with our analysis to complete the scientific assessments in December of this year so that we will have the report which will be the basis for the hearings that will take place then in the first half of next year in order to make a recommendation to the President in June.

Mr. WHITFIELD. Okay. Well, Mr. Secretary, I would thank you so much for your time this morning and for your staff. We genuinely appreciate you being here. I think this was a useful hearing which provided some important information. I know that all of us look forward to working with you in the future. Thank you very much. This hearing is concluded.

[Whereupon, at 12:20 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows:]

DEPARTMENT OF ENERGY
September 8, 2000

The Honorable JOE BARTON
Chairman
Subcommittee on Energy and Power
Committee on Commerce
U.S. House of Representatives
Washington, DC 20515

DEAR MR. CHAIRMAN: On March 24, 2000, T.J. Glauthier, Deputy Secretary of Energy, testified regarding the Department's Fiscal Year 2001 Budget. On July 25, 2000, we sent you the answers to 32 questions.

Enclosed are the remaining answers to the questions submitted by you and Representatives Ehrlich and Wilson.

Also enclosed is the remaining insert submitted by Representative Whitfield to complete the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Barbara Barnes at (202) 586-6341.

Sincerely,

JOHN C. ANGELL
Assistant Secretary, Congressional and Intergovernmental Affairs

Enclosure

QUESTIONS FROM CHAIRMAN BARTON

- Q1. Does the Department still intend to open the permanent repository in the year 2010?
- A1. Since 1989, the Department has maintained the goal of an operational repository in 2010. We reaffirmed this date when we issued our 1994 Program Plan, in the 1998 Viability Assessment, and again in our 2000 revision to our Program Plan. We are close to a decision in 2001, when we expect we will have completed the scientific and technical studies that will enable the Secretary to decide whether or not to recommend the Yucca Mountain site to the President for further development. It is also important to note that maintaining the schedule milestones that lead to emplacement in 2010 is contingent upon receiving sufficient funding through the Federal budget process. Our Fiscal Year 2001 budget in part supports completing the documentation necessary for a decision, and will also be applied to completing license application work that was deferred due to past budget shortfalls. We should not delay a decision on Yucca Mountain when we are so close to completing the work.
- Q2. The Department's latest Program Plan for Yucca Mountain, Revision # 3 dated February 2000, indicates that the Department will complete a final Environmental Impact Statement this summer, a Site Recommendation Consideration Report late this year, and submit a final Site Recommendation to the President in mid-2001. All of these steps are critical to support a license application in 2002. Is this still the Department's current schedule?
- A2. The schedule presented in Revision 3 of the Program Plan remains the Department's current schedule. The text of the Plan presents milestone dates in terms of fiscal years; milestone charts indicate roughly when, within a fiscal year, a milestone would be met. For the final environmental impact statement (FEIS), the Program Plan, page 11, says it "will be issued in FY 2001 contemporaneously with a site recommendation if a site recommendation is submitted to the President." The FEIS, per se, does not appear on a milestone chart. Milestone charts in the Plan indicate that the Site Recommendation

Consideration Report will be issued early in FY 2001 and that a site recommendation determination would be made late in FY 2001.

- Q3. With the reduced funding you received in the current fiscal year and the request of \$437.5 million for FY 2001, will the Department be able to stay on schedule to meet these critical milestones?
- A3. Over the past three years, the Civilian Radioactive Waste Management Program has received over \$100 million less than the Administration's budget request for the Program. In each of those years, the Program has adjusted to focus its efforts on only those science and engineering activities that are essential to support a site recommendation decision. Although we have deferred planned work, we are still on schedule to complete the Site Recommendation Consideration Report in Fiscal Year 2001, site recommendation to the President, also in FY 2001, and a License Application to the Nuclear Regulatory Commission in 2002. The FY 2001 budget request of \$437.5 million is necessary to complete work that must accompany a site recommendation to the President under the Nuclear Waste Policy Act of 1982, including that work the Program had deferred due to the funding shortfalls. We believe, contingent upon availability of required funding, we can accomplish these critical milestones.
- Q4. The funding reduction must have some effect, if not on schedule, then on the quality of your work. Given these funding levels, will the reports that the Department prepares be rigorous enough to withstand the scrutiny of the licensing process and legal challenges?
- A4. We have not allowed reduced funding to erode the quality of our work because that would jeopardize our license application and the multi-billion dollar investment our Nation has made in developing a repository program. Consequently, faced with funding reductions, in recent years we have been forced to defer some work that was not critical to meeting near-term milestones. The Department's budget request for OCRWM for FY 2001 addresses this issue squarely, under "Major Issues." It states,

The Program is no longer readily able to absorb any additional funding

reductions without it having a potential impact to selected critical near-term milestones.... The Program has, despite receiving 10% less than requested for the period FY 1998-FY 2000, been able to maintain the schedule for activities supporting the site recommendation milestone by focusing on critical scientific and technical work and by reducing some work supporting activities in the out-years. This budget request supports a body of work that will enable the Program to maintain an FY 2002 schedule for License Application. This would, in turn, continue to support the planned 2010 date for emplacement of waste.

Q5. Last year Secretary Richardson testified before this Committee that the permanent repository cannot be opened in 2010 without a major change in how this program is funded. Under the present arrangement, the program typically receives around \$400 million or less per fiscal year. However, beginning in Fiscal Year 2003, the program will require from \$800 million per year to more than \$1.2 billion in several years. Yet the Department's budget submission makes no acknowledgment of this problem and offers no solution on how it can be solved. The President threatened to veto the solution this Committee provided in H.R. 45, yet has not offered any solution of his own.

Q5a. What solutions does the Department propose to generate sufficient funds for the repository program over the next ten years?

A5a. Both the Administration and Congress have been aware for some time that the overall constraints of the Federal budget process have the potential to limit the availability of funding for the nuclear waste program in the out years. Last year Secretary Richardson testified that he would like to work together with the Congress to assure the repository program continues to be adequately funded. As you noted, the Administration opposed the funding provisions of H.R. 45 that would move the Nuclear Waste Fund off budget and exempt it from the Budget Enforcement Act.

If the Yucca Mountain site is recommended by the President and approved by Congress, the Department will review appropriate mechanisms to provide adequate funding.

Q5. Last year Secretary Richardson testified before this Committee that the permanent repository cannot be opened in 2010 without a major change in how this program is

funded. Under the present arrangement, the program typically receives around \$400 million or less per fiscal year. However, beginning in Fiscal Year 2003, the program will require from \$800 million per year to more than \$1.2 billion in several years. Yet the Department's budget submission makes no acknowledgment of this problem and offers no solution on how it can be solved. The President threatened to veto the solution this Committee provided in H.R. 45, yet has not offered any solution of his own.

- Q5b. At the present rate of funding, when will the repository be ready to begin accepting spent fuel?
- A5b. As stated earlier, if the site is recommended by the President and approved by Congress, the Department will review appropriate mechanisms to provide adequate funding to ensure that the current schedules can be met.

Program Funding

- Q5c. What will be the additional financial liability facing the Federal government over DOE's failure to begin accepting spent fuel by the statutory and contractual deadline of January 31, 1998 due to the additional delay in the repository?
- A5c. It is too early to evaluate the ultimate impact of DOE's delay in accepting spent fuel. Resolutions of claims based on this delay will involve highly fact-specific and individualized decisions about the incremental costs incurred by each contract holder as a direct result of the delay of DOE in meeting its obligation under the Standard Contract. If all utilities were to decide to reach a settlement with the Department, it could cost an estimated \$2-3 billion in adjustments. However, it must be noted that there is a very high degree of uncertainty about the assumptions upon which this estimate is based. A more detailed discussion of this issue is contained in Appendix A to the OCRWM Annual Report to Congress for FY 1999.
- Q6. The budget projections furnished to us by the Department last year showed an estimated defense contribution of \$200 million per year in FY 2001 and subsequent fiscal years. Why has the Department requested a defense contribution of only \$112 million for FY 2001?
- A6. The Administration and the Department have exercised judgment in balancing competing national requirements and Program priorities in arriving at the FY 2001 budget request. We believe that the Defense Nuclear Waste Disposal appropriation request level of \$112 million is appropriate given the competition for scarce resources.

- Q7. Does the DOE budget projection take into account the damage claims against the Federal government over DOE's failure to begin accepting spent fuel by the statutory and contractual deadline of January 31, 1998?
- A7. The Department's FY 2001 budget request does not include amounts related to potential damage claims at issue in the ongoing litigation. It is premature to speculate on potential liabilities while the Department is awaiting the outcome of litigation.
- Q8. Has the DOE and the DOJ reached any conclusions yet on how those damage claims will be paid, whether from DOE accounts or from the Judgment Fund?
- A8. There has been no final determination as to whether DOE accounts or the Judgment Fund would be used if payments were to be made to contract holders because of the delay of DOE in meeting its obligation under the Standard Contract.
- Q9. With these critical milestones just around the corner, please explain the rationale behind the Secretary's decision to recompute the Management and Operations contract for the Yucca Mountain project, with a new contractor slated to take over in November 2000. If the Department is really serious about meeting the schedule for its site suitability recommendation in 2001, why would you decide that this year is the right time to change contractors for the project?
- A9. The objective of a competition is not necessarily to bring on a new contractor. The objective is to subject the Government's requirement to a competitive process in order to engage the market place and to ensure that we acquire the services of the best evaluated contractor. This is standard Government policy.

Given the fact that we are nearing the end of the site characterization phase, it is logical to recompute this major contract now to ensure the support we will need during the pre-licensing, licensing, and construction phases. This recompetition is consistent with the transition from a program dominated by scientific site characterization activities to one focusing on licensing and engineering activities, if the site is designated. Since the current management and operating contract expires in February 2001, we want to ensure appropriate support as we plan, integrate, and manage a complex program in a Nuclear Regulatory Commission licensing environment. The recompetition will provide the new set of skills to support the pre-licensing, licensing and construction phases.

Q10. You have testified that DOE intends to meet its schedule for the Yucca Mountain repository. In making that statement and in the FY2001 budget submission, which radiation standard are you assuming will apply to the repository - the standard proposed by the NRC or the standard proposed by the EPA?

A10. For planning purposes, the Department is assuming that the proposed Environmental Protection Agency (EPA) standards, modified to reflect selected elements of the Department's comments on them, would be applicable. The Department's ability to comply with the EPA standards in a rigorous licensing process hinges on EPA's adoption of reasonable and realistic provisions in the final standards, as well as on how the Nuclear Regulatory Commission (NRC) implements the provisions. The Department's proposed revisions to EPA's proposed standards would provide standards that protect public health and safety and the environment, and would be implementable for licensing a repository. This use of the proposed EPA standards is for planning purposes only; we will comply with final regulatory requirements.

Q11. The EPA standard is more stringent than the NRC's, and also includes a separate groundwater standard. Can you still design and construct a repository under the proposed EPA standard? What is the estimated cost and schedule impact on the repository if the Department has to apply the EPA standard?

A11. The consequences of using the Environmental Protection Agency (EPA) standards, including the separate groundwater standard, for designing and constructing a repository hinge on the detailed provisions that will be included in the final EPA standards. The Department's ability to demonstrate compliance with the groundwater standard in a rigorous licensing proceeding depends on EPA's adoption of reasonable and realistic provisions. The Department provided comments on the proposed rule that, if adopted, would result in a stringent but implementable standard that would provide adequate protection of the public and the environment.

The impacts on meeting the 2010 schedule for waste emplacement and on costs will depend on how the final EPA standards will be interpreted by the Nuclear Regulatory Commission and applied in a licensing process. Costs for a Yucca Mountain repository are driven in large part by the stringency of radiological protection standards and the need

to demonstrate, in a rigorous licensing process, confidence in the calculated projections for repository performance over 10,000 years. Under our current understanding of the proposed EPA standards, the individual dose limit is effectively reduced from 15 mrem/yr from all sources to 0.2 mrem/yr from drinking water. The effect of requiring overly stringent radiation standards and the corresponding need to further increase confidence in assessing repository performance could result in the rejection of an otherwise suitable site, and the *de facto* rejection of the geologic disposal option without commensurate benefit to the protection of public health and safety.

Q12. EPA is to issue their final standard later this year. The Senate bill, recently passed by the House as well, delays issuance of that final rule until June of 2001. What is the impact of that delay on your schedule?

A12. The Environmental Protection Agency (EPA) standards will play a central role in achieving the long-standing policy of the United States to dispose of high-level radioactive waste and spent nuclear fuel in a geologic repository. The EPA's current plans are to issue final radiation standards this year, well in advance of the Department's current schedule for a decision on whether or not to recommend Yucca Mountain for further development in 2001. The delay of final regulations until June 2001 or later could delay the decision on site recommendation that we have scheduled for FY 2001.

Take Title Concept

Q13. First of all, what is the status of the Department's discussions with utilities over this take title idea? Specifically, how many utilities are still actively interested in the idea, and what are the specific arrangements that DOE is proposing to these utilities?

A13. A number of utilities have sued the Department for its delay in beginning to dispose of spent nuclear fuel. The Department has committed to maintain the confidentiality of its settlement discussions with any utility that chooses to conduct such discussions. On July 20, 2000, the Department of Energy and PECO Energy Company signed an agreement to address the Department's delay in accepting spent fuel from utilities. This is the first such agreement with a utility. While it applies only to PECO's Peach Bottom Plant in Pennsylvania, the agreement is intended to be a framework that can be applied to other

nuclear power plants. The agreement allows PECO to reduce the projected charges paid to the Nuclear Waste Fund to reflect costs reasonably incurred by PECO due to the Department's delay in accepting nuclear waste. Under the agreement, PECO must demonstrate that the adjustments were the direct result of the Department's delay in moving spent nuclear fuel from the Peach Bottom Plant.

Q13a. What is the estimated cost of implementing the take title proposal? Are these costs included in the Department's budget request?

A13a. It is too early to estimate the overall costs of implementing the take title proposal and the Department's budget request does not reflect any such costs. The costs of implementing the take title proposal would be determined in the context of resolving claims by individual contract holders. Resolution of these claims will involve highly fact-specific and individualized decisions about the incremental costs incurred by each contract holder as a direct result of the delay of DOE in meeting its obligation under the Standard Contract. In general, DOE expects that the use of the take title proposal as part of the resolution of a claim would have a positive impact on the Department's ability to achieve a resolution of the claim that is beneficial to the Government's financial interests. The PECO settlement allows PECO to exercise the option of the Department taking title to the fuel under certain circumstances. We have estimated that if all utilities reached a settlement similar to the PECO one, it could cost an estimated \$2-3 billion in adjustments. However, this estimate is based on adjustment of charges and not based on DOE taking title to the spent fuel.

Strategic Petroleum Reserve

Q14. How much would it cost to build and operate a regional refined product reserve and where would a regional reserve be located?

A14. In the June, 1998, "Report to Congress on the Feasibility of Establishing a Heating Oil Component to the Strategic Petroleum Reserve", the Department estimated that it would cost approximately \$53 million to build a regional refined product reserve, exclusive of land, and \$1.5 million to \$2 million annually to operate, exclusive of oil acquisition costs. Due to the environmental impact, construction of tanks in the Northeast at a new site is highly impractical. The Department would instead contract for storage and storage

services in existing Northeast commercial facilities, which is estimated to cost \$8 million per year, exclusive of oil costs.

Strategic Petroleum Reserve

Q15. Some importers of heating oil have suggested that the market distortions caused by a regional heating oil reserve would change the incentive for importing heating oil and discourage importing because it would increase their risk. Have you discussed the pros and cons of the government essentially manipulating heating oil prices through a refined product reserve?

A15. We have had numerous discussions of this issue with representatives of the oil industry. We realize there is the potential for the Government to change the behavior of suppliers, but we believe the method we select to draw down the Reserve and the limited size of the Reserve, plus full disclosure of our intentions for its use will minimize distortions in the market place.

Strategic Petroleum Reserve

Q16. If the U.S. built a regional refined product reserve under what conditions would it be drawn down? What impact would it have on heating oil dealers and refiners?

A16. The U.S. does not plan to build a regional refined product reserve, but prefers to contract for storage and storage services in existing facilities. The President has called for legislation which would consider conditions for the drawdown of the Heating Oil Reserve. Absent new legislation, the current version of the Energy Policy and Conservation Act conditions drawdown for all components of the Strategic Petroleum Reserve on a Presidential finding of a "severe energy supply interruption," which is defined in the act.

It is likely that drawing down the Heating Oil Reserve would only occur when there is a threat of physical shortages, when heating oil dealers might be self rationing or incapable of making deliveries. In those cases, the existence of an emergency reserve would help keep some heating oil dealers in business. We expect a Heating Oil Reserve to have little or no impact on refiners. First, at the time the Reserve might be drawn down the refiners will have a price incentive to produce all the distillate possible. Second, the reason for a shortage in the Northeast will in all likelihood be caused by regional logistics and

weather problems when products at refineries cannot quickly reach users, and third, two million barrels equates to only about 11 percent of single's day consumption of all petroleum products in the United States.

Strategic Petroleum Reserve

- Q17. Do you believe more natural gas pipelines to the Northeast would take some of the pressure off heating oil in situations like the one that occurred this January and February?
- A17. The Administration is currently engaged in a study which will address this issue. In general, we welcome more use of natural gas because it is an abundant, domestic resource and provides an alternative energy resource.

Strategic Petroleum Reserve

- Q18. Please explain how the royalty-in-kind program reduces the U.S. vulnerability to petroleum supply interruptions. Will this program increase the number of days of import protection?
- A18. The royalty-in-kind program increases the crude oil inventory level of the Strategic Petroleum Reserve. A higher inventory level provides several benefits: first, the higher inventory allows for a faster draw down rate, which is a very important determinant of the value of the Reserve during a disruption. Second, the size of the Reserve determines its credibility as a deterrent to politically motivated disruptions, and third in the event of a sustained disruption, the larger reserve allows the maximum amount of time for diplomatic solutions to work. Finally, our policy regarding inventory influences the stockpiling programs of the world's other consuming countries, with which we are mutually dependent for our energy security.

Fossil Energy Research and Development

- Q19. DOE requests an increase of \$12 million for R&D directed at ensuring the reliability of the natural gas distribution system. What are the most significant problems facing natural gas pipelines, and what programs address these problems?
- A19. The following piping system areas listed in **bold** constitute the most significant problems facing the natural gas pipeline system. The Fossil Energy Infrastructure R&D technology program will address the areas listed in bullets.

Sensors and Locating:

- Improved methods to inspect for third party damage to pipelines ("smart pigs")

- Alternative inspection devices are required for pipelines that cannot be inspected using "smart pigs"
- Use of automation technologies to provide real-time information on the status of pipelines and related facilities, including encroachments
- Stress corrosion cracking detection
- Methods to leak survey facilities quicker
- Obstacle detection for horizontal boring
- Detection of obstacles to avoid dig ins
- Smart, automated, inside the pipelines inspection sensor systems and repair technologies

Gas Leak Detection:

- Remote detection of gas leaks

Materials:

- Improved plastic piping materials for distribution systems, including materials rated for higher pressures
- Composite reinforced pipelines
- Higher strength steel pipelines
- Extend the life in its aging infrastructure to assure continued system reliability

Information Studies:

- Information on the best methods to maximize the flexibility of pipe transmission systems, including compression and storage facilities, to ensure that systems successfully meet peak demands
- Gas system reliability analysis
- Distributed resource system integration model
- System reliability with increasing integration with electric grid

Trenchless Installation Methods:

- Methods to install and renew facilities without excavating

Fossil Energy Research and Development

- Q20. The fossil fuel R&D account is one of the few programs to decrease in DOE's latest budget request. Can you explain the Department's reasons for this reduction, especially in light of current oil prices?
- A20. The Department extensively documented its portfolio to help evaluate its FY 2001 priorities, and recently updated the portfolio in preparation for the FY 2002 budget development process (the portfolio is available on the web at www.osti.gov/portfolio). The FY 2001 evaluation resulted in extra emphasis in a number of energy areas, including ones in Fossil Energy such as carbon sequestration, natural gas infrastructure, ultra clean fuels, advanced separations membranes, and certain international activities. Counterbalancing these increases were decreases in areas, such as the utility-scale

Advanced Turbine Systems Program, which is nearing completion. In FY 2001 the funding reductions for Fossil Energy R&D exceeded the increases, but this phenomena varies from year-to-year. Overall, we believe that the Fossil Energy FY 2001 R&D portfolio is balanced given future needs and the development stage for the technologies that make up the Department's energy portfolio.

Hanford Privatization

The Pit 9 privatization contract was DOE's first privatization contract, and was supposed to save taxpayers millions in cleanup costs, and complete the cleanup faster. Five years later, millions in taxpayer funds have been spent at Pit 9 but no cleanup has occurred. DOE's Pit 9 contractor, Lockheed Martin, is now suing DOE.

In next year's budget, DOE requests \$450 million for the privatization of Hanford's radioactive tank wastes. If things go as planned, this project will cost a total of at least 12.5 billion and last 20 years. Unfortunately, things never go as planned at DOE. The Hanford privatization contract has many of the same of the same technical and operational risks as the Pit 9 project, but on a much larger scale.

- Q21. Privatization contracting works best when the technical and operational risks associated with a project are minimized. Is DOE convinced that the technical risks associated with Hanford radioactive wastes are well understood?
- A21. The Department has decided to terminate the BNFL contract because their April 24, 2000, proposal was unacceptable in many areas, including cost, schedule, management, and business approach, even though the fundamental BNFL technology and design are sound. On May 8, 2000, the Secretary announced the decision to compete a performance-based design and construct contract, with a new contractor being selected by January 15, 2001. In the near term, operating responsibility will be transitioned to an existing contractor, with later operation of the completed facility to be awarded by competitive solicitation.

Hanford Privatization

- Q22. Mr. John Taylor, CEO of BNFL, Inc., resigned recently due to a scandal related to BNFL's falsification of nuclear safety documents at its nuclear plant in England. In light of BNFL's problems, are you sure BNFL is the right contractor for the \$12.5 billion Hanford privatization effort?
- A22. The Department has decided to terminate the BNFL contract because their April 24, 2000, proposal was unacceptable in many areas, including cost, schedule, management, and business approach, even though the fundamental BNFL technology and design are sound. On May 8, 2000, the Secretary announced the decision to compete a performance-based design and construct contract, with a new contractor being selected by January 15, 2001.

In the near term, operating responsibility will be transitioned to an existing contractor, with later operation of the completed facility to be awarded by competitive solicitation.

Hanford Privatization

- Q23. Does DOE have a fallback plan for cleaning up the Hanford tank wastes in the event that the Hanford privatization effort with BNFL fails like Pit 9 failed?
- A23. The Department has evaluated the proposal for the vitrification of the Hanford tank waste that was submitted on April 24 by BNFL. As a result, the Department decided that the proposal was unacceptable in many areas, including cost, schedule, management, and business approach. The Department, in part, concluded that the price of the proposal included high contingency, fees, and return on investment which essentially shifted the financial risk from BNFL back to the Federal Government. Thus, a key benefit of privatization, in this case, was not realized. The May 8 decision by the Secretary involves reintroducing competition into the project for a performance-based design and construction contract. This contract, with selection by January 15, 2001, may build on the technical and design approaches contained in BNFL's April 24 proposal. We will closely examine any features that we believe can be incorporated into the future design and construction contract to better balance risks to lower overall costs to the Government.

Hanford Privatization

- Q24. At our Oversight and Investigations hearing on the Hanford privatization contract in 1998, we learned that BNFL did not have a certified cost accounting system in place on this project. Has the problem been corrected to DOE's satisfaction?
- A24. Although we are in the process of terminating the BNFL contract, this issue is still very relevant to the Department because the certified cost accounting system will be used to determine the termination costs to be paid to BNFL.

BNFL's contract requires compliance with cost accounting standards; submittal of an adequate and compliant disclosure statement, and submittal of certified cost and pricing data, as laid out in the Federal Acquisition Regulation, Part 15.4. The Department has enlisted the Defense Contract Audit Agency (DCAA) to audit

BNFL's certified cost and pricing proposal for the current BNFL work. Initially the DCAA found the proposal inadequate to support the contract negotiations. In response, BNFL developed a correction plan to address the issues raised by the DCAA. DCAA, BNFL, and DOE have worked to correct the problems. In September 1999, DCAA issued the final report on the BNFL Part B-1 proposal and judged it acceptable for negotiations. They also stated that there were no unsupported costs in the BNFL submittal. In November 1999, DOE's Office of River Protection, with DCAA's assistance, initiated a review of BNFL's estimating system. In February 2000, the DCAA issued a follow-up report on the previously disclosed estimating system deficiencies. There were no adverse findings reported by DCAA at that time.

Based on the results of the DCAA reviews, DOE believes BNFL and its partner, Bechtel National, Inc., are in a position to deliver current and accurate cost data to support closeout negotiations.

Cleanup Levels at DOE Sites

The Commerce Committee, along with the Resources Committee, is evaluating legislation that would address some of the long-term stewardship issues at the Rocky Flats site in Colorado. In correspondence to Chairman Young on December 14, 1999, Assistant Secretary Huntoon stated that "*[t]he Department is generally supportive of the goals of the bill,*" and that "*it poses no major cost impacts or delays in plans for Site closure.*" In correspondence to Senator Allard on March 9, 2000, the sponsor of H.R. 2179 (Rep. Mark Udall) stated that rather than maintaining the soil cleanup levels to the anticipated open space land use, that "*the cleanup levels should be set so that they are fully protective for any onsite future uses.*"

- Q25. If the Rocky Flats soil cleanup level is changed from the anticipated open space scenario to a hypothetical residential scenario, what impact would this have on the estimated cost and schedule of the closure project?
- A25. It is not currently possible to specifically quantify the cost and schedule impact of basing the soil cleanup levels at Rocky Flats on a residential future land use assumption. The total cost of the cleanup would increase, however, with a commensurate delay in the site closure date. The specific impacts would be driven by several factors, including the precise definition of residential use applied, the specific cleanup level established to be protective of residential land use, and the total acreage of the site that would be impacted

Cleanup Levels at DOE Sites

Q26. Would the Department be supportive of the language proposed for H.R. 2179, which would force DOE to clean up the Rocky Flats site to a level more protective than the anticipated land use? Do you think this would establish an acceptable precedent for other DOE cleanups?

A26. It is the policy of the Department that cleanup levels should reflect a realistic assessment of future land use. This policy is consistent with Environmental Protection Agency requirements and guidance that are applicable to all cleanup under the superfund law or the Resource Conservation and Recovery Act. There are a variety of factors which influence the final remedy selected and the cleanup levels reached at DOE sites. This remedy selection process involves extensive interactions with the public, regulatory agencies, and other stakeholders. Various criteria in addition to future land use also are evaluated, including effectiveness of the proposed remedy, implementability, and overall cost. The actual cleanup level achieved reflects a consideration of the various factors involved, and is a site-specific decision which will ensure that the current and future risk to the environment and the public is acceptable. If a cleanup level were required for Rocky Flats that was protective of any possible future use, the cost and schedule for site closure would be significantly impacted. Additionally, large tracts of natural lands could be disturbed, with significant negative impact to the ecosystem.

The Department is working with the sponsor of H.R. 2179, Representative Udall, and other State and local government representatives to determine the most appropriate approach, and we believe the existing regulatory framework provides a good process for establishing cleanup levels at the various EM sites needing remediation. Establishing more protective levels than needed for the anticipated land use would have significant cost impacts and would not be a good precedent for other DOE site cleanups.

Cleanup Levels at DOE Sites

Q27. Does the Department have a standard methodology for establishing cleanup levels at its sites?

A27. Cleanup levels for the Environmental Management (EM) sites are established under

standard regulatory frameworks, either the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA). These regulatory frameworks are similar, and work performed under one often satisfies the requirements of the other when both apply to a specific cleanup activity. The cleanup carried out is based on site-specific risk assessments and a variety of other factors. Both CERCLA and RCRA rely on the site-specific balancing of evaluation criteria, which include effectiveness, implementability, expected future land uses, and costs, to select among the particular remedial alternatives being considered at a given site.

The Department's goal is to select and implement remedies that are protective of human health and the environment. This remedy selection process involves extensive interactions with the public, regulatory agencies, and other stakeholders. Remedies selected are the result of negotiations with DOE's stakeholders, including the Environmental Protection Agency (EPA) and State regulators.

In general, cleanup levels are tied to the expected future land and resource uses of DOE sites, which determine the likely exposure pathways and, therefore, potential risks. The actual cleanup level is established based on the CERCLA or RCRA remedy selection criteria, or may be determined by the actual performance of the selected technology and its effectiveness in achieving the desired reductions in contaminant concentrations.

A common misconception is that the cleanup level for a given contaminant at one site can simply be applied to another site. Although this may be true in some situations, there are a number of reasons why often this is not the case. First, cleanup may be targeting different land uses, such as industrial versus residential; and, therefore, a higher concentration may be protective under the exposure scenarios in one land use and not the other. Second, site-specific differences in soil chemistry can affect the bioavailability of certain contaminants and, therefore, the risk posed by them. Third, multiple contaminants often are present, and the actual cleanup level selected for a single contaminant will be a

reflection of the overall risk posed by the mix of contaminants present. The latter is particularly common when dealing with multiple radionuclides and cleanup is being established on an agreed-to dose level. For these reasons, the levels of cleanup between sites will not always be consistent. The existing regulatory frameworks proscribe the process for establishing cleanup levels for the various EM sites requiring cleanup. All final cleanup decisions are made to ensure that the current and future risk to the environment and people are acceptable.

Cleanup Levels at DOE Sites

- Q28. As the first major DOE site to head toward closure, the decisions you are making at Rocky Flats will set the standard for other DOE cleanups. What steps are you taking to ensure that the decisions you are making at Rocky Flats establish a responsible benchmark for other DOE cleanups?
- A28. A key factor in determining the needed level of cleanup at the various Departmental sites is to first establish the future land use assumptions. This process involves extensive interactions with the public, regulatory agencies, and other stakeholders and will of necessity vary site by site. Once a reasonable future land use assumption is established, appropriate cleanup levels can be determined by modeling the potential for the movement of contaminants through the environment as well as the potential routes of human exposure. The final land uses for the sites differ across the complex, and this leads to a range of differing cleanup levels. Since there are a wide variety of site-specific issues, various stakeholder concerns and other considerations, activities being conducted vary from site to site. At Rocky Flats, we are working closely with the regulators and stakeholders to develop reasonable and achievable cleanup standards. Cost is certainly a consideration in choosing among cleanup alternatives. The lessons learned at Rocky Flats as cleanup decisions are made will be shared with other sites for their potential use.

Cleanup Levels at DOE Sites

- Q29. I fully support the responsible closure of these DOE sites and the safe elimination of the Federal government's environmental liabilities. However, I will not support "goldplating" the cleanup of our Cold War legacy. We need a reasonable balance between responsible cleanup and the responsible use of taxpayer dollars. What can you do to assure me that the Department is achieving this reasonable balance?

A29. The Department is striving to achieve a reasonable balance between responsible cleanup and the cost for that cleanup. We do not believe any of our activities are being "gold plated," and we believe we are implementing remedies that are protective of human health and the environment. As I have previously stated, there are a wide variety of factors that go into decisions for each of the DOE sites requiring cleanup. These involve site-specific factors, stakeholder concerns, and other considerations related to each site being remediated.

Any cleanup accomplished under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) must meet a standard of protectiveness. Remedies selected are the result of negotiations with DOE's stakeholders, including the Environmental Protection Agency (EPA) and State regulators, if the cleanup is under a Federal Facility Agreement. Cleanup under CERCLA is based on site-specific risk assessments and a variety of other factors. In addition, cost is an important criterion which is evaluated to consider trade-offs between cleanup alternatives. Additional administrative controls exist to preclude "gold plated" remedies. For example, many of the Department's significant cleanup decisions are independently reviewed by the EPA's National Remedy Review Board. More importantly, in order to meet our overall cleanup objectives and recognizing our obligation to be effective stewards of taxpayer dollars, it is essential that we implement each individual cleanup project in the most cost-effective manner. As I indicated previously, this varies from site to site, and conditions at a particular site dictate the level and extent of cleanup carried out.

Progress at Closure Projects

I recognize the importance of safeguards and security within DOE, but I am concerned about the impact the Department's efforts to improve security may have on DOE's closure projects in Ohio and Colorado. One of the reasons we have seen progress at the closure sites has been their flexibility to take the savings they generate from support activities, including safeguards and security, and redeploy those savings into the actual work of cleaning up and closing down facilities.

Q30. Can you assure me that DOE will continue to fund closure projects as it has in the past, allowing the closure sites to control their own spending and to reallocate their savings into accelerated cleanup activities?

A30. The Department is carrying out a number of efforts to improve security at its sites, but these initiatives will not impact planned work at the closure sites. As with safety, safeguards and security are integral to our Environmental Management programs. Currently all safeguards and security programs for which the Office of Environmental Management is accountable are rated "Satisfactory" by DOE's Office of Independent Oversight.

Under a realignment made in 1999 by the Department, responsibility for managing safeguards and security funding has been transferred to the Department's new Office of Security and Emergency Operations. (This organization is not part of the recently created National Nuclear Security Administration.) The Department transmitted to the Congress on June 5, 2000, an FY 2001 budget amendment consolidating safeguards and security funding, which included security investigations, throughout the entire Department. The budget amendment establishes separate safeguards and security lines in seven of the Department's appropriation accounts. The safeguards and security programs for DOE's closure projects in Ohio and Colorado will be included in the Defense Facilities Closure Projects account. In addition, specific language is proposed to allow the transfer of any excess safeguards and security funding in that account to be applied to environmental management cleanup efforts at those closure sites. The Office of Environmental Management does not anticipate any adverse impacts associated with cleanup efforts across the DOE complex as a result of the Department's decision.

Progress at Closure Projects

- Q31. DOE's Closure Projects, which include the Mound and Fernald sites in Ohio and the Rocky Flats site in Colorado, are all attempting to achieve closure by the year 2006 – an objective I think we can all applaud. Is your FY01 budget request for closure projects sufficient to ensure the closure of these sites by 2006?
- A31. The Department believes the budget levels requested in FY 2001 for the DOE closure projects, including the Rocky Flats, Fernald, and Mound sites, maintain our schedules for closure by 2006. The Department is currently going through a "rebaselining" effort to guide accelerated closure activities at Fernald, Rocky Flats, and Mound.

The level requested for the Rocky Flats site maintains the Department's progress toward site closure in 2006. On January 24, 2000, the Department signed a new contract with Kaiser-Hill that formalizes the commitment of the Department and the contractor to complete the cleanup by 2006. The contract assumes annual funding of \$657 million. Kaiser-Hill will submit a revised 2006 Closure Project Baseline in June 2000 which will be based on stable annual funding at this level.

The FY 2001 funding request for Mound supports the amount of work planned in that year. Curtailment of cleanup work in "critical path" areas due to worker safety and health concerns over the decontamination of buildings containing "stable metal tritides," as well as the recent requirement to extend the amount of excavation in certain contaminated soil areas, may impact the current schedule. These events have required us to evaluate and revise the site's baseline cost and schedule, which will be completed later this year. The Department is hopeful, however, that closure can still be achieved by 2006.

For Fernald, the FY 2001 funding level will permit us to maintain our schedule to remove all currently contaminated facilities and stabilize remaining contaminants by 2006. The current Fernald baseline extends beyond 2006, but DOE's goal is to complete site closure by 2006. To support the 2006 goal, the Fernald closure contract Request for Proposals requires the successful contractor to submit a revised baseline within the first six months of the new contract. The successful contractor will perform a due diligence review of the existing baseline, which extends beyond 2006 for some items, incorporate the revised completion dates for Silos 1 and 2 using the latest technical approach, and incorporate a ceiling on outyear funding of \$290 million per year. This new procurement is an essential part of the Department's strategy, and the new baseline is central to achieving our goal of closure by 2006. Incentives are included to ensure the contractor emphasizes cost control and project acceleration to obtain the maximum incentives. Consistent with this objective, the maximum fee incentive corresponds to the Department's goal of overall project completion by 2006.

Progress at Closure Projects

- Q32. What are the obstacles these sites will face as they work toward closure, and is the Department committed to fully enabling the success of the closure projects?
- A32. The Department faces a number of obstacles to achieve cleanup completion as planned for its closure projects, but remains committed to the closure goals at these sites. A variety of issues exist, including offsite shipment of materials, technical treatment concerns, and scheduling required activities in an optimal manner to ensure site completion as planned. The Department is working to resolve the various issues. I will briefly explain some of the issues for three of DOE's major closure sites.

At Rocky Flats, the scope of work required to reach site closure in 2006 is well understood and documented in the Rocky Flats 2006 Closure Project Baseline. While the schedule is ambitious, the new closure contract provides significant incentives for the contractor to meet that schedule. One of the key challenges is the removal of all special nuclear material from the site in 2002. This requires the identification of firm disposition paths for a number of nuclear material and waste streams and careful coordination with receiver sites throughout the complex. This also requires the receiver sites to remain available to accept the materials and waste. The site also needs to finalize the details of the end state, including the final action levels for soil cleanup, through regulatory and public processes. However, the Department and the Rocky Flats site contractor, Kaiser-Hill, are actively addressing these challenging issues. I do not believe these concerns will adversely impact our plans to close Rocky Flats in 2006.

The Department is fully committed to closing Rocky Flats in 2006. The new closure contract formalizes this commitment, including its detailed process for the identification and provision of Government-furnished services and items. These services and items include the identification of receiver sites for materials and wastes, the certification of the needed shipping containers, the coordination and resolution of issues, and other support activities.

At the Mound site, we currently foresee no insurmountable roadblocks to completing the cleanup and transfer of the site to the City of Miamisburg by the end of FY 2006. The most significant concern is the need to secure a receiver site for the Mound transuranic (TRU) waste. The TRU waste is presently stored in a building that lies on the site's "critical path" for cleanup; thus, the DOE must commence the transfer of the TRU waste off site within the next few years. In order to save time and money, the Department's current plan is to ship the Mound TRU waste to another DOE site without having to repackage it. In lieu of that, the Department will have to build a repackaging facility at Mound. In either event, DOE would eventually dispose of the waste at the Waste Isolation Pilot Plant in New Mexico. We are optimistic that this issue will soon be resolved and do not see it as an impediment to meeting the Mound closure schedule. In addition, we are still evaluating potential schedule impacts due to curtailment of work because of worker safety and health concerns associated with "stable metal tritides" and the need for an increased excavation of contaminated soils.

At the Fernald site, there are both known and unknown uncertainties due to the magnitude of the effort. Known potential obstacles include the need to identify a process to treat and dispose of nuclear material that has been declared waste which cannot be shipped in its present form. The Department is currently conducting a study of potential technologies to identify a process that is safe and efficient for treating this Fernald material. Additionally, there are significant technical challenges ahead for treating and remediating the K-65 residues contained in two silos. An amendment to the Record of Decision for the Silos Project has been drafted and will undergo public and stakeholder review to determine what treatment technology will be selected. Regardless of the treatment technology selected, its implementation will present significant technical challenges in such areas as radiation protection and radon control. Also, potential delays could occur if non-typical waste material is encountered during waste pit excavation or other projects. The Department is working to resolve these issues.

Impact of Decision on Metals Recycling

- Q33. The Secretary decided to put a hold on the recycling of volumetrically-contaminated nickel from the Oak Ridge site until the NRC can issue a national release standard. Yet the Secretary has also proposed accelerating cleanup of Portsmouth and Paducah, which have similar contaminated materials. What does the Department intend to do with the radioactive material from these sites – recycle it or send it to a disposal site?
- A33. The acceleration of cleanup at Portsmouth and Paducah is underway and will not be significantly impacted by the Department's decision to prohibit the commercial release of nickel with volumetric residual radioactivity or the decision on July 13, 2000, to suspend the unrestricted release of scrap metals from radiological areas in DOE facilities until certain management improvements are implemented. The ongoing cleanup program at Paducah and Portsmouth is focused on soil and water related remedial action activities and includes the management of existing scrap metal piles that are generally unsuitable for cost-effective recycle. The majority of these materials will be disposed of as low-level waste, and this disposal will not be impacted by the noted changes to our scrap metal release policies.

The Paducah site does store approximately 10,000 tons of volumetrically contaminated nickel ingots from an operational upgrade in the 1970's. These ingots will continue to be stored at Paducah while the Department's moratorium is in place or until the Department identifies an internal use for the nickel.

- Q34: What steps is DOE taking to correct its petroleum, natural gas, and alternative fuel data quality?
- A34: EIA's ability to provide data and information on the natural gas industry has been severely challenged by changes in the regulatory environment and corresponding industry restructuring. Over the past several years, coverage of the industrial and commercial usage has declined. For example, by FY 1998, industrial price information for only 15% of the gas used by industrial customers was captured by EIA surveys, down from 75% coverage in FY 1984. Furthermore, coverage in the commercial areas dropped from more than 90% in FY 1987 to about 65% in FY 1998. With a move toward more competition at the retail level for residential and small commercial customers, coverage of the prices paid could be substantially reduced from the nearly 100% level of coverage we currently have. To provide better and more market oriented data, EIA is engaged in a multi-year overhaul of the natural gas data collection and data systems. EIA plans completion of this effort by December 31, 2002 with portions of the project becoming operational as soon as January 1, 2001. Pilot testing of improved survey instruments is currently underway. Also, starting with FY 2001, EIA is requesting a permanent increase of \$175 thousand to

provide the funding needed to address natural gas industry frames' (the universe of potential respondents) maintenance. With changes in the natural gas industry, maintaining frames for the existing populations has become increasingly difficult. This difficulty results from the new corporate entities being formed to market natural gas, as well as merger and consolidation activity in the industry. In addition, corporate downsizing and staff turnover in the industry has also increased the effort required of EIA to track changes in the industry. These additional resources will allow EIA to monitor the changing structure and rapidly changing market participants and improve the quality and timeliness of its data and information.

With respect to the petroleum area, EIA has asked for additional funds in FY2001 to monitor and track changes in the industry as a result of mergers, acquisitions, divestitures, and accounting systems changes. During the late 90's, EIA witnessed quality problems as we saw the petroleum industry go through drastic changes. We found that high merger activity, downsizing, and major system changes had a direct impact in the increase in late and nonresponse in our surveys. The problem is the result of a long, slow deterioration in the quality of the data reported to EIA that could not be fully analyzed and corrected by EIA with the current level of contractor and government resources. Currently, there is no budget for long-term quality control work and government staff are fully committed to resolving current cycle data problems so that basic weekly and monthly information can go out the door on schedule. EIA has requested that funds be used to reestablish the weekly/monthly data quality assurance program, specifically the petroleum supply and demand data released by the EIA from its weekly and monthly reporting systems for the major products, including motor gasoline, and jet fuel, which have come under scrutiny.

Secondly, EIA plans to prepare forms changes to maintain relevance in the Petroleum Reporting System. Specifically, the environmental regulatory changes mandated under the Clean Air Act Amendments of 1990 are entering a new phase, referred to as Tier II, that includes new standards for low sulfur gasoline, national versus regional standards, low sulfur diesel, and other diesel specifications. These changes will affect the structure of the petroleum industry in ways that necessitate changes in our reporting system as early as 2002. Funding is required in FY 2001 to analyze the impact of these regulatory changes, modify survey reporting forms, and change computer systems that aggregate and disseminate the data (including hard copy and electronic media).

In regard to alternative fuel data quality, EIA is doing the following:

- 1) A report assessing the quality of EIA data related to alternative-fueled vehicles has recently been completed by an outside consultant. Findings are being reviewed to determine next steps in improving data quality.
- 2) The EIA-886, "Alternative Transportation Fuels and Alternative Fueled Vehicles Annual Survey," is scheduled to be re-cleared by the Office of Management and Budget in 2001. At that time, EIA will issue a Federal Register Notice soliciting comments on the proposed changes to the form.

- Q35: Recently, EIA did not have up-to-date information about home heating oil prices. Are you taking any steps to improve the timing of your surveys and the amount of information collected?
- A35: EIA publishes residential heating prices for heating oil on a semimonthly and monthly basis. The monthly data are published in the *Petroleum Marketing Monthly (PMM)*. Typically, data from the monthly surveys are not timely since they are collected one month and published two months later. In an effort to improve timeliness, EIA has implemented and published early estimates for selected petroleum data series in the *PMM*. This has reduced the lag by one month.

EIA does, however, publish more timely data through its State Heating Oil and Propane Program (SHOPP). This program is a cooperative agreement with States in the Northeast and Midwest who agree to collect residential heating oil and propane prices for EIA twice a month during the heating season from October through March. During supply disruptions or energy emergencies, States, per the request of EIA, will collect residential prices on a weekly basis, as was the case this past heating season when heating oil prices spiked in the Northeast. Data from the SHOPP survey are collected on a Monday and published on Friday of the same week. Data appear on EIA's web site at <http://www.eia.doe.gov>, and in Appendix C of the *Weekly Petroleum Status Report*. Since EIA has other data series which are collected and published on the same day, EIA is currently investigating ways to improve the SHOPP publication cycle from Friday to Wednesday of the same week.

- Q36. Electricity restructuring is an Administration priority. Please describe how you are revising your electricity surveys and data systems to reflect changes in the nation's restructured electricity markets. How will these changes improve the quality of the information? Will it be updated more frequently? Will it include different information?
- A36: The Energy Information Administration has undertaken an effort, "Electricity 2002," to determine how the electric data surveys should be revised to capture the changes evolving in the electric power industry.

This effort first began by obtaining information from a variety of stakeholders through a series of 11 focus groups involving 165 people. This included members of investor and publicly-owned utilities, nonutilities, State and Federal agencies, academia, investment groups, consumer organizations, environmental groups, Congressional staff, and the media. Using this information, we began to determine what new information we will need to collect in the future, how often, and from whom. It should be noted that this determination is taking place in an environment where less than half of the States have either passed legislation or put in place regulatory orders to allow for retail competition. Given this state of affairs, we have proposed some preliminary ideas which we have shared with more than 20 groups in a series of briefings to industry, government and the public.

When we finish developing our full proposal, it will be shared with all interested parties. We expect that to begin this summer. After obtaining informal comments, we will issue a Federal Register notice for formal comments in early 2001. We plan to go to the Office and Management and Budget in August 2001 for final approval, with the goal of making the new surveys and their accompanying processing systems ready for January 2002.

At this point in time we expect that more information will have to be collected from nonutility generators, treating them more like utility plants. We are also developing an alternative method to capture the unbundled portions of the consumer's electricity bill, by requesting information from energy service providers and electricity distributors. As the Environmental Protection Agency currently sponsors our environmental data collection form, we are working with them to determine what data elements need to be collected in the environmental area. It is likely that we will further reduce the amount of information we currently gather on demand-side management, as that area is likely to be less emphasized as we move toward competition. We plan to soon begin to work with the Office of Emergency Operations and the North American Electric Reliability Council to determine what information needs to be collected to assess the reliability and adequacy of the electric industry. To keep the burden on industry to a minimum, we will probably rely to some extent on information put onto the Internet by Independent System Operators (or their equivalents) concerning transmission and electricity outages.

Our plans also include developing a new computer system to enable us to mail out and process the data in a more efficient and accurate manner. Tests are underway now to determine if Internet-based data collection methods can be used successfully. If we are

successful, it will reduce the industry's burden and provide us with more accurate data. This will also reduce our burden for reviewing the data for accuracy and enable us to provide the data to our customers in a more timely manner. The proposed changes will result in:

- Improved quality through more complete coverage of the expanded electric power industry for electricity sales and prices and cost of fuels used to generate electricity;
- More timely dissemination of the data through Internet collection;
- Different and/or expanded information concerning transmission and reliability.

Finally, we will also revise our hard copy publications to reflect the new data we collect and to design Internet-based products that will be more useful to our customers. We expect these changes to be put in place by September 2002, to accommodate the data which will be collected on an annual basis.

Federal Energy Management Program (FEMP)

- Q37. In the DOE Budget Highlights, you state that the federal government is the nation's largest energy user and spends \$8 billion each year on energy. Has the DOE calculated the amount of savings for the federal government if electricity was available on a competitive basis? If not, do you intend to?
- A37. We have not performed a detailed analysis of Federal electricity savings. However, the *Supporting Analysis for the Comprehensive Electricity Competition Act* that the Department issued in May 1999 suggested that average savings from competition would exceed 10% of consumers' electricity bills on a nationwide basis by 2010. Applying the estimate of a 10 percent savings to Federal electricity purchases, which the General Accounting Office estimated at \$3.5 billion in 1995, would result in a ballpark savings estimate of roughly \$350 million annually. Indirect savings to the federal government from electricity competition, which would arise from the lower cost of non-electricity goods and services and services and a reduced cost of inflation-indexed programs, are likely to be much larger although they are not related to the Federal energy cost estimate cited in your question.

Finally, looking at all levels of government, the direct savings from electricity competition would be substantially increased. Total government spending on electricity is approximately \$20 billion per year. With competition, these costs are likely to decline by at least 10%, a savings of close to \$2 billion per year. This restructuring dividend will

help governments maintain balanced budgets into the future while meeting critical public needs.

Price-Anderson Act

Q38. Last year, DOE sent a report to Congress recommending that the Price-Anderson Act "be continued without any substantial change because it is essential to DOE's ability to fulfill its statutory mission involving defense, national security and other nuclear activities." In particular, DOE recommended the amount of DOE indemnification (\$9.43 billion) should not be changed. Is it still the Administration's position that the Price-Anderson Act should be reauthorized without substantial change? If so, when does the Administration plan to send legislation to Congress?

A38. The Department supports reauthorization of the Price-Anderson Act without substantial change. Legislation has already been introduced, S.2162, and DOE believes that bill would be an appropriate vehicle for reauthorization of the Act. That bill would permanently establish a flat amount of \$10 billion for DOE indemnification. The bill is consistent with DOE's five recommendations to Congress with the exception of imposing civil penalties on DOE nonprofit contractors. DOE has changed its position on nonprofit contractors and supports the provision in S.2162 which would allow civil penalties to be imposed up to the amount of fee paid. DOE also supports H.R. 3383 which would similarly allow civil penalties to be imposed up to the amount of any "discretionary" fee paid to a contractor, subcontractor, or supplier under the contract under which such violation occurs.

In the DOE Report to Congress on the Price-Anderson Act of March 1999 (DOE Report), DOE recommended that the current amount of indemnification (\$9.43 billion) not be decreased. The continuation of an amount at least this high is essential to assure the public that prompt and equitable compensation will be available in the event of a nuclear incident or precautionary evacuation. Any reduction in this amount would be perceived as a lessening of the commitment to provide prompt and equitable compensation in the event of a nuclear incident.

The current amount of the DOE indemnification is based on the financial protection

available in the event of a nuclear incident at a commercial nuclear power plant licensed by NRC. Under the current Act, the amount of DOE indemnification does not decrease if there is a decrease in the amount of financial protection available in the event of a nuclear incident at a commercial nuclear power plant. In other words, the amount of the DOE indemnification would remain constant at \$9.43 billion even if the amount of financial protection provided under the NRC Price-Anderson system were to decrease because of a decrease in the number of operating commercial nuclear power plants. DOE recommended continuation of the prohibition against any downward adjustment of the amount of the DOE indemnification. The amount of the DOE indemnification should not decrease because there is a decrease in the number of licensed commercial power plants.

Price-Anderson Act

- Q39. The Price-Anderson Act , which expires in 2002, was last reauthorized in 1988 for a fourteen year period. How long of an extension does DOE believe is appropriate?
- A39. The DOE Report to Congress on the Price-Anderson Act of March 1999 (DOE Report) did not address the length of time for which the Act should be renewed. However, the fourteen-year extension in the 1988 Price-Anderson Amendments Act has not proven to be unreasonably long. In addition, the Department could support S. 2162 which would extend indefinitely DOE's authority to indemnify its contractors. This permanent authority would provide a high level of assurance to contractors and the public that indemnification and compensation would always be available in the event of a nuclear incident in connection with a DOE activity.

Price-Anderson Act

- Q40. The report DOE sent to Congress last year indicated that civil penalties have proven to be a valuable tool in increasing the emphasis by DOE contractors on nuclear safety. Does DOE believe the level of civil penalties (\$110,000 per day) is appropriate?
- A40. DOE believes that the current level of civil penalties of \$110,000 is appropriate. The Act provides that, if any violation is a continuing one, each day of such violation shall constitute a separate violation for the purpose of computing the applicable civil penalty. Thus, in egregious cases, the penalty could quickly grow to a large sum over a relatively

short period of time if calculated on a per violation, per day basis. The Act also allows the Secretary, in determining the amount of penalties, to take into account the nature, circumstances, extent, and gravity of the violation or violations and, with respect to the violator, ability to pay, effect on ability to continue to do business, any history of prior such violations, the degree of culpability, and such other matters as justice may require. Moreover, the Secretary may compromise, modify or remit civil penalties, with or without conditions. DOE believes that the currently authorized amount of civil penalties combined with the other provisions in the Act allows DOE sufficient flexibility and discretion to increase or decrease that amount as necessary in various circumstances.

Office of Scientific and Technical Information

- Q41. There have been concerns that DOE's Office of Scientific and Technical Information, namely that this office receives only a small fraction of the scientific and technical information resulting from DOE's research and development programs. Critics argue that this program served a useful role from the 1940s through the 1970s, when it made nuclear science information available to promote nuclear energy development, but that it no longer serves a useful role. How much access does OSTI have to this information? If it does not enjoy broad access to the scientific and technical information resulting from DOE's research and development programs, OSTI cannot fulfill its ambitions to be the national library of energy information.
- A41. The Office of Scientific and Technical Information (OSTI) has broad access to the scientific and technical information resulting from DOE's research and development programs. OSTI organizes and makes retrievable the vast majority of unclassified DOE scientific and technical information (STI) reports, receiving STI products from all DOE sites (DOE National Laboratories, DOE Offices and other DOE Contractor Facilities), approximately 7,000 other research entities, and international exchange programs. On the average, OSTI receives approximately 15,000 STI reports per year. Accountability/tracking systems are used or are in development to ensure access to the full range of information from DOE's research and development programs, in compliance with already existing DOE Orders and Guides.

The Department of Energy's focus for the 1940s through the 1970s was largely on nuclear energy (i.e. Atomic Energy Commission). As the Department's scientific

emphasis has changed, so too has the information that OSTI collects and disseminates. Broad access, preservation, and electronic availability of this wide range of information is critical. As measured by the quantity of scientific and technical information disseminated, and the number of patrons served, OSTI plays a more useful role now than it did in the 1940s through the 1970s. For example, in the paper environment (pre-1997), OSTI distributed 10,000 reports per year upon request; now, patrons of OSTI's web-based systems are downloading 130,000 STI reports per year.

As a result of OSTI's advances using information technology to make full-text unclassified research information available on the Internet, access to DOE STI is at an all time high, serving 1.5 million users annually. Specifically, OSTI now offers a trilogy of web-based information systems to provide free electronic access to DOE's STI. For technical reports, the DOE Information Bridge (www.osti.gov/bridge/) provides searchable, full-text access to over 67,000 technical reports (over 4 million searchable pages) and is accessed approximately 250,000 times per year with full-text reports downloaded at a rate of 2,500 per week. Downloads of single pages are even higher, a service unavailable before the electronic era. For scientific journals, PubSCIENCE (www.osti.gov/pubscience), developed and implemented by OSTI through negotiations with journal publishers, covers 1,032 journals of 26 participating publishers (1.7 million journal citations) and provides searchable bibliographic records with hypertext linkages to full-text journal articles at publishers' web sites. PubSCIENCE is accessed over 1,000,000 times per year. For preprints, the PrePRINT Network (www.osti.gov/preprint) links users to 800 preprint servers and Internet sites to provide access to 300,000 preprints, and is projected to exceed 100,000 accesses in its first year of operation.

In summary, OSTI has broad access to DOE's STI, resulting in OSTI having the world's most comprehensive collection of energy, science and technology

information. OSTI's goal is to create for the physical sciences what the National Library of Medicine (NLM) has done in the life sciences. The products described above (DOE Information Bridge, PubSCIENCE, and the PrePRINT Network) have brought this goal much closer, but much remains to be done. This goal has recently been addressed by a workshop hosted by DOE at the National Academy of Sciences and chaired by Dr. Alvin Trivelpiece. The May 2000 "Workshop Report on a Future Information Infrastructure for the Physical Sciences." concluded that "the time is now, the need is now" to address issues and gaps in communicating and using information in the physical sciences. The report envisions a far-reaching, comprehensive information infrastructure for the physical sciences to increase the productivity of the scientific enterprise in the United States.

DOE SURPLUS ASSETS

- Q42. Three years ago the Committee asked DOE to identify its surplus assets. We were surprised to learn that DOE has no idea how much of its property is surplus. We were even more surprised to learn that DOE has no idea how much property it owns, where that property is located, and whether that property is necessary to discharge DOE's statutory missions or surplus. At the time, DOE said it could not answer these simple questions because its contractors controlled virtually all of DOE's assets, and he contractor's declined to tell DOE which DOE assets were needed and which were surplus. Has anything changed over the past three years? Can DOE now identify its surplus assets?**
- A42. When the Department of Energy (DOE) was asked to identify total personal property holdings, the response at that point in time, was that the Department did not have a system that had the capability to identify what were its holdings, where they were located, or the condition of the property. Since 1994, the Department has worked aggressively to build the Property Information Data System (PIDS) and the Energy Asset Disposal System (EADS) which are both proven, effective management tools. While three years ago we were unable to provide a detailed response to your questions, since then, we can say that we now know what we have, where it is located, and its condition. In addition, through our own experience and as verified by third party oversight, we can assure Congress that DOE's excess personal property, as defined in Code of Federal Regulations (CFR) Title 41 Subpart 101-43.001-6, is dispositioned in accordance with the Federal Property and Administrative Services Act of 1949. We are pleased to report that there is no question that the Department is in a much better position with respect to the conduct of its property management programs and its ability to handle excess personal property than it was in 1994.**

The focus of the question however, seems to be directed to that property in the hands of the Department and its contractors which may no longer be needed. The identification of all property excess to the Government needs represents a continuing challenge for the Department. There are significant costs involved with the effort to identify and dispose of excess property and, as was the case in 1994, there are still few incentives to encourage Federal managers or contractors to expend limited project related resources in the identification of excess property. In the past, we have had discussions with Congressional staff regarding the establishment of new mechanisms to better support incentivising activities. We would be happy to work with the Congress to develop this approach or others that would provide the much needed incentives.

DOE SURPLUS ASSETS

- Q43. Do DOE contractors have an obligation under Federal law and their contracts with DOE to identify surplus assets? Do contractors fulfill this obligation? If not, why not and why doesn't DOE do something to enforce these legal obligations?
- A43. The Department of Energy's contractors are obligated to identify excess assets and dispose of surplus assets by sales, donations, or destruction and yes, they do perform that requirement. However, the process of routinely surveying, identifying, and acting on excess property is resource intensive, costly, and not one of legal enforcement, but one of how best to allocate limited resources. We would be happy to work with the Congress to develop new approaches to provide incentives for the identification of excess property.

DOE SURPLUS ASSETS

- Q44. DOE recently issued a rule on the sale or lease of surplus property at nuclear weapons facilities to nearby communities. This rule permits DOE to sell or lease property at less than fair market value if the property requires considerable infrastructure improvements to make it economically viable. Why should DOE ever sell land at less than fair market value to nearby communities? I can see how that serves the interests of local communities, but how does sale of land at less than fair market value serve the interests of taxpayers?
- A44. A strong case can be made for the disposal of land, *and facilities*, at less than fair market value, or nominal consideration, where significant infrastructure improvements must be made to bring the site up to code and make it marketable. This would be so even if the site included vacant land, the rationale being that the vacant land is part of the marketable complex and should be considered as part of the whole for potential economic development. However, if a decision were made to segment the site and

dispose of it in parcels, or to simply dispose of raw land from existing sites, then that sale of vacant land should **normally** be at its fair market value.

DOE SURPLUS ASSETS

- Q 45. How much land does DOE own? How much of this land does DOE consider selling or leasing to communities near nuclear weapons facilities under the new DOE rule?
- A45. The Department of Energy has custody and control of 629,156 acres of acquired land and 1,495,609 acres of withdrawn public domain land. The new rule provides for the leasing of *improvements only* on public domain land. In general, the Department cannot dispose of public domain lands. The rule directs that Field Office Managers annually make available specific real property for possible transfer in support of economic development. In order to make this annual requirement concomitant with a recent Inspector General's audit requirement to justify the retention of land and facilities and to identify land and facilities that are excess to the Department of Energy's requirements, the Department has requested data to satisfy the rule and requirements of the IG recommendation be released on December 31, 2000, and annually thereafter. Because of a Secretarial initiative to reduce the Department's footprint, an interim report is due to Headquarters by July 3, 2000. We will be pleased to provide you with a copy of the interim report.

National Laboratories

- Q46. Former Deputy Secretary Charlie Curtis launched an ambitious effort a few years ago to establish a strategic plan for the national laboratories. What is the status of this effort?
- A46. The Laboratory Operations Board (LOB) released Phase I of the Strategic Laboratory Missions Plan (SLMP) in 1996. This Plan provided the first-ever description of how the Department's missions are carried out through its laboratories, academia, and the private sector. It also helped answer the basic question of how the Department uses its laboratories in furtherance of its missions and why. Since then the LOB has devoted its attention to improving cost and performance at the Department's laboratories. While there is no current effort underway to develop a new strategic plan for the laboratories, several actions

taken by the LOB and DOE, consistent with the management principles contained in the SLMP, have improved the cost efficiency and performance of the laboratories, while moving toward more focused roles for the laboratories and encouraging laboratory collaboration.

The actions to date include:

- A LOB review and endorsement of the DOE Laboratory Institutional Planning process for its major laboratories which includes a strategic planning component with both a 5-year plan and 15-year vision based on each laboratory's strategic plan. This process ensures DOE focuses on the laboratories as institutions and considers both program and operational issues. DOE holds an annual on-site review of each major laboratory to discuss their mission, program initiatives, issues and successes, and their plan for the future of the laboratory. Each laboratory then prepares a final Institutional Plan which flows from and is integrated with the DOE Strategic Plan, the program strategic plans, and the R&D portfolios and program roadmaps. This process and resulting laboratory Institutional Plan ensures a continued connection between the long-term strategy for the laboratory and the DOE strategic and program plans.
- The LOB and DOE have also endorsed a performance-based approach to management of the DOE laboratories consistent with the management principles outlined in the SLMP. DOE has made a strong commitment to implement a results-driven, performance based management system as indicated in the attached memorandum from the Deputy Secretary.
- The LOB has also been tracking the overhead cost reductions at the DOE laboratories through a set of indicators that are reported to them

periodically. These indicators show a trend of reduced costs at the laboratories, especially related to the administrative and business functions as DOE makes an effort to minimize the requirements placed on the laboratories. For example, one cost saving move was to no longer require the laboratories to follow the Federal procurement principles and practices, but allow them to use best commercial practices. In addition, the move to a new DOE performance-based approach to management has contributed greatly to these overhead reductions by eliminating many burdensome requirements originally put on the labs.

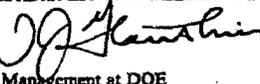
Another way in which the Department is improving linkages between program goals and research activities, such as those conducted at the laboratories, is through the Research and Development Council. In April 1995, the Department established the R&D Council, and in January 1998, the Department re-chartered and revitalized the forum for the purpose of improving and focusing Department-wide R&D activities. The Under Secretary and the program assistant secretaries now work more closely with one another to coordinate planning, programming, and laboratory management.

A major benefit of this approach is that through the use of newly implemented R&D portfolio management and technology roadmapping efforts, the R&D Council helps to integrate and rationalize R&D activities throughout the Department and across the national laboratories. Roadmapping and portfolio analysis are currently being integrated into the Department's budget review process to provide DOE senior management with new strategic management tools to develop and evaluate the Department's overall technology strategies for achieving program goals and for establishing a focused R&D agenda. We anticipate that this integration will be completed during the next budget cycle.

We believe the DOE senior management's commitment to performance-based management, and to an improved planning and budget process, will achieve a long-term, stronger management system for the Department's laboratory system. Coordinated interactions of the LOB, the R&D Council, and the Laboratory Directors will ensure that the new management culture is institutionalized and continuously improved. The new emphasis on technology roadmaps and portfolio analysis, should provide the right tools to more effectively develop priorities, budgets, and program plans.

The Deputy Secretary of Energy
 Washington, DC 20585
 April 20, 2000

MEMORANDUM FOR HEADS OF DEPARTMENTAL ELEMENTS

FROM: T.J. GLAUTHIER 
SUBJECT: Performance-Based Management at DOE

The Department recently marked the first complete cycle for a fiscal year under the Government Performance and Results Act of 1993 (GPRA) by publishing the FY 1999 Accountability Report. The Accountability Report combines reporting on the Secretary's Performance Agreement with the President with the audited financial statements.

An annual accounting of our performance is the last step in the basic management cycle of planning, budgeting, executing, and evaluation that we refer to as our Strategic Management System. The Department has come a long way since launching its results-oriented approach in 1993 with the development of the first ever Departmental Strategic Plan, annual performance agreements with the President, performance-based contracting, business management oversight pilots (BMOP), budget justifications being based on performance, and a new performance-based employee appraisal system in Headquarters.

The purpose of this memorandum is to establish performance-based management as the management approach for the Department. As the Chief Operating Officer, I am directing the Department to continue to use performance-based management as its tool to: plan for, manage, evaluate, and reward organizational, employee, and contractor performance; improve the delivery of products and services; facilitate communications with customers and stakeholders; encourage employees and contractors to achieve excellence; and guide decision-making.

Performance-based management at DOE includes identifying clearly what needs to be accomplished; determining performance objectives and delegating authorities to the level closest to where the work is to be performed; deciding what to measure and the appropriate data collection methods; establishing challenging and realistic performance expectations; maintaining operational awareness; and collecting performance data, assessing actual performance against expectations, and using the results to improve performance.

These are the guiding principles for the application of performance-based management at the Department:

1. Performance objectives, measures, and expectations will be established in partnership with affected organizations, employees/employee representatives, contractors, and other stakeholders. These objectives will link with and support the strategic, multi-year, and annual goals of the parent organizations up to and including the Department.

2. Resource decisions, including annual budget requests, will be made and justified based on well-documented, previously achieved results and expected future workload and outcomes.
3. Self-assessment will be a primary tool used at all levels to assess and evaluate results and to improve performance. Evaluation will also include operational awareness, periodic reviews and "for cause" reviews.
4. Performance results will be used to: improve on-going efforts; hold managers, employees, and contractors accountable and recognize their performance; and inform the Department's performance management program.

We recognize that no management approach can anticipate all potential situations. In addition, we accept that because we are stewards of public funds and work for the American taxpayer, how we do our work is often as important as the end-results of our work. Therefore, DOE's performance-based management approach includes the necessary flexibility and mechanisms to ensure effective stewardship of public funds and accountability to the American taxpayer.

When establishing new or revising existing requirements documents, Departmental elements should, as deemed appropriate, ensure that such documents are made consistent with this memorandum and its guiding principles.

cc: Bill Kennedy, CR

National Laboratories

Q47. The labs have long operated with great independence from DOE management. In some cases, it appears the labs are assuming missions unrelated to DOE's statutory missions. Who should set the missions of the national laboratories – the labs or DOE? Do the labs have legal authority to pursue missions outside the statutory missions of DOE?

A47. The Department of Energy's (DOE) missions are: to foster a secure and reliable energy system that is environmentally and economically sustainable, to be a responsible steward of the Nation's nuclear weapons, to cleanup our own facilities, and to support continued United States Leadership in science and technology. The DOE Laboratories' mission is to implement and support the DOE missions in energy, environment, science and national security. DOE program managers review, approve and use congressionally appropriated funds to support projects at the laboratories in each of their program areas consistent with their mission.

In carrying out its mission, DOE has developed world-class core competencies in technologies such as energy, pollution control and remediation, advanced materials, advanced instrumentation, biotechnology, information and communication software, high-performance computing, modeling and simulation.

and advanced weapons technologies and sensors. Congress, through the Economy Act of 1932, recognized the benefit to a federal agency of being able to utilize the expertise and services of another federal agency and not having to duplicate them. Similarly, the Atomic Energy Act of 1954 recognized the benefits of making the DOE laboratories available to others, providing that private facilities are inadequate for that purpose. The Department, in recognizing the unique resources available within its laboratory system and their potential to solve critical and challenging advanced research and technology problems for non-DOE organizations, allows for the performance of fully reimbursable Work for Others (WFO) by its management and operating contractors for other Federal agencies and/or private sector entities.

WFO projects are unique activities, which require a special working relationship. Departmental policy states that DOE resources can be made available if (1) the proposed work is consistent with or complementary to DOE missions and the missions of the facility to which the work is to be assigned; (2) the work will not adversely impact the execution of assigned programs at the facility; (3) the proposed work will not place the facility in direct competition with the domestic private sector, and (4) the proposed work will not create a detrimental future burden on DOE resources. These determinations must be made and certified in writing by the responsible DOE contracting Officer or authorized designee prior to the performance of work.

Annually, each laboratory prepares and submits an Institutional Plan, which presents the laboratory's missions, program initiatives, and its vision for the future of the laboratory. DOE reviews and analyzes the Institutional Plan and then holds an annual on-site review to discuss the proposed plan with the laboratory. After the on-site visit and discussion and resolution of any comments or issues, DOE approves the laboratory's plan, including the Work for Others funding level and mix. Therefore, this process ensures that it is and should

remain a DOE responsibility, through its programs and institutional oversight, to establish the missions of its laboratories consistent with DOE statutory authority, the Department's mission and strategic plan.

Q48 Secretary Richardson recently announced a scheme to relocate the Atlas uranium mill tailing pile, funding in part by royalties from development of the Naval Oil Shale reserve No. 2.

A48 The Departments of Energy and Interior, and the State of Utah and the Ute Indian Tribe entered into a Memorandum of Understanding (MOU) in February 2000, wherein the Naval Oil Shale Reserve No. 2 is proposed to be transferred to the Ute Indian Tribe, in fee simple, with the exception of the northwestern portion which will be transferred to DOI; Additionally, the MOU provides that the Utes will pay a 9% royalty interest to DOE from any resource production/development; and to place the eastern side of the Green river in a "protected" status.

DOE will take responsibility to remove of the Atlas Mill tailings located near Moab, Utah and dispose of them at a site away from the flood plain of the Colorado River. The State of Utah has agreed that the disposal site for the mill tailings will be located in Utah. Any payments received by the Federal government from the 9% mineral interest referred to above will be used to help pay for removal and disposal of the mill tailings.

Q49 Given that the Nuclear Regulatory Commission determined in its final EIS that capping the pile in place is fully protective of human health and safety and of the environment, what is the technical basis for the Secretary's decision that the pile needs to be relocated? Please provide the Committee with a copy of any technical analyses that were done to support the Secretary's decision.

A49 The Department considered many factors which led to the decision to support the request to remediate the Atlas mill tailings. A recent study by the U.S. Geological Survey states endangered species of fish are threatened by the discharges from the mill tailings into the Colorado River. A copy of that report is attached.

**Determination of a Safe Level of Ammonia that is Protective of
Juvenile Colorado Pikeminnow in the Upper Colorado River, Utah**

by

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Dec. 30, 1999

Final Report

1998 Quick Response Program

**Determination of a Safe Level of Ammonia that is Protective of
Juvenile Colorado Pikeminnow in the Upper Colorado River, Utah**

Final Report

1998 Quick Response Program

Partner Agency and Region: U.S. Fish and Wildlife Service Region 2 (Salt Lake City Office)

Principle Introduction Investigators: James F. Fairchild and Ann L. Allert

INTRODUCTION

Various sections of the un-impounded portions of the Upper Colorado River above Lake Powell have been declared critical habitat (Fed. Reg. 59:13374-13400) for four endangered fish species: Colorado pikeminnow (*Ptychocheilus luctus*), razorback sucker (*Xyrauchen texanus*), humpback chub (*Gila cypha*), and bonytail chub (*Gila elegans*). The U.S. Fish and Wildlife Service, under the auspices of Section 7 of the Endangered Species Act, must seek to protect these species and determine if any private, State, or Federal activities could jeopardize remaining populations of these endangered species.

The abandoned Atlas Mill Uranium Tailings Pile, located on the western bank of the Upper Colorado River near Moab, Utah, is a perceived threat to endangered fish species of the Upper Colorado River (USFWS 1998). This tailings pile lies in the immediate vicinity of critical habitat for both the Colorado pikeminnow and the razorback sucker. The U.S. Nuclear Regulatory Commission, in cooperation with other Federal and State agencies, is currently evaluating several options for long-term stabilization of the tailings pile (e.g. capping, removal, etc.) based on several environmental, economic, and legal factors.

In early 1998 the U.S. Fish and Wildlife Service requested that the Columbia Environmental Research Center (CERC), Biological Resources Division (BRD), U.S. Geological Survey (USGS), Columbia, MO provide research and technical assistance to determine the potential adverse impacts of the tailings pile to the endangered fish species of the Upper Colorado River. Subsequently, the Central Region of the USGS/BRD provided \$20,000 in funding to the CERC via the Quick Response Program to facilitate research and technical assistance to the U.S. Fish and Wildlife Service. This final report presents the background information, research results, and conclusions derived from this Quick Response Project.

History of the Atlas Mill Facility:

The Atlas Mill Tailings Pile is located on the west bank of the Upper Colorado River in the 100-year flood plain. The property and facilities were originally owned by the Uranium Reduction Company and regulated by the Atomic Energy Commission, precursor to the Nuclear Regulatory Commission (NRC). The mill and site were acquired by the Atlas Corporation in 1962. Atlas Corporation ceased operation of the mill and ore milling in 1984.

Milling of ore at the Atlas site has resulted in a large tailings pile located approximately 230 m from the west bank of the Upper Colorado River and 3.7 km northwest of Moab, Utah. The pile occupies about 53 ha of land and is about 0.8 km in diameter and 28.65 m high. The pile rises to an elevation of 1,237 m above mean sea level with a height of about 27 m above the surface of the Colorado River terrace, which is approximately 1,210 m above mean sea level at the south side of the pile nearest the river (USFWS 1998).

Current drainage from the pile has been estimated by Oak Ridge National Laboratory (ORNL) in Grand Junction, Colorado to be between 25 and 75 liters per minute and could take up to 270 years to drain the pile; similarly, it is estimated that concentrations of contaminants in the adjacent ground water will not reach a steady state for approximately 240 years (ORNL, 1998 a). The ground water contamination plume extends beyond the Atlas property to the south and is over 1,700 m wide and 10 m deep and discharges directly into the Colorado River (ORNL, 1998 b). The plume for some contaminants (ammonia, uranium, molybdenum and nitrates) is mature and these constituents have been discharging to the river since the early 1970's (ORNL, 1998 c). The U.S. Fish and Wildlife Service believes that for other contaminants (e.g., selenium) the plume has not fully reached the bank of the Colorado River (USFWS, 1998).

Atlas Corporation activities at the Atlas site are currently covered by NRC Source Material License SUA-917 and regulated under the Title II Uranium Mill Tailings Radiation Control Act of 1978. The Atlas Corporation was previously involved in the process of closing and reclaiming the Atlas site. However, in 1998 the company declared bankruptcy and was not able to complete a Corrective Action Plan (CAP) for approval by the NRC. Thus, the remedial action plan for the site remains incomplete.

Significance of Research to the USFWS and other Management Agencies:

The USFWS Utah Field Office has been assessing the proposed reclamation of the Atlas Mill Tailings Pile since 1983. At that time the Utah Field Office expressed its concern in a letter to the Assistant Regional Director concerning a review of the Emergency and Remedial Response Information System Inventory and identified concerns about possible effects on Colorado pikeminnow and razorback sucker. On June 26, 1997, the Service issued a draft jeopardy biological opinion (DBO) to the Nuclear Regulatory Commission. Since issuance of the DBO, the Service, Council of Environmental Quality (CEQ), Department of Interior (DOI), and Service solicitors have all been working with the NRC and the Trustees to resolve the issues and determine the best means of reclamation of the Site. The Service has since issued a revised draft biological opinion (RDBO) on April 14, 1998 to the Region 6 Regional Office (RO) and is awaiting comments to finalize the opinion. The RDBO concluded jeopardy to the four endangered Colorado River fishes from the contaminated leachate leaking into the Colorado River from the

tailings pile. The RDBO included three reasonable and prudent alternatives to avoid jeopardy: (1) expedite planning and implementation of a groundwater corrective action plan; (2) defer the decision on capping the pile until expeditiously arranged bioassay studies could be conducted to more effectively determine cleanup levels required to remove jeopardy to listed species and; (3) payment of a depletion fee to the Colorado River Recovery Program to offset the impacts of the 154.3 acre-foot water depletion identified for the proposed action (USFWS, 1998).

Data collected by ORNL further supports the Service's biological RDBO in concluding that the Atlas Mill Tailings Pile is a site-specific point source of ammonia and that the proposed capping of the pile in place may jeopardize the continued existence of razorback sucker and Colorado pikeminnow due to the continued leaching of contaminated groundwater into the Colorado River (ORNL, 1998 b). Additionally, the proposed action will result in the destruction or adverse modification of designated critical habitat for the Colorado pikeminnow and razorback sucker (USFWS, 1998).

The current RDBO jeopardy opinion has been based on the best available data and opinion of Service resource professionals. Based on the precarious existence of the Colorado River fishes and the fact that the Site is located near a suspected fish nursery area, the Service has determined that the level of take anticipated under the proposed reclamation action could impact population numbers and recruitment and is sufficient to jeopardize the continued existence of these species (USFWS, 1998). All three constituent elements of designated critical habitat for Colorado pikeminnow and razorback sucker will be adversely modified: 1) water that is of good quality; 2) physical habitat potentially habitable by fish during all life stages; and 3) a biological environment capable of providing a food supply for the endangered fishes (USFWS, 1998). The Service feels that the proposed reclamation project activities could result in continued input of contaminated water into the Colorado River mixing zone until an acceptable groundwater corrective action plan is approved and implemented.

The development of the corrective action plan is dependent on a determination of a criterion or safe concentration of ammonia that is protective of Colorado pikeminnow and other endangered fishes in the river. This protective concentration must then be compared to measured ammonia concentrations in the river to conduct a site-specific risk assessment. The collective results of these studies will be used by the U.S. Fish and Wildlife Service in assisting the NRC and other Federal and State agencies in developing effective remedial action plans for the site which protect remaining populations of endangered fishes in the Upper Colorado River.

Objectives:

This study had three objectives:

- 1) Conduct spatial mapping to determine the distribution of ammonia, metal, and radiochemical concentrations in the Upper Colorado River adjacent to and below the Atlas Mill Tailings Pile in order to estimate exposures to endangered fishes,
- 2) Conduct toxicity testing with early life stages of fathead minnows and Colorado pikeminnow to determine the concentration of ammonia that is protective of endangered fishes in the Upper Colorado River, and
- 3) Compare the toxicity of ammonia to measured environmental concentrations to conduct a site-

specific risk assessment.

METHODS

Site mapping for contaminant concentrations:

Water was collected in a regular grid framework extending from 500 m above to 1,000 m below the Moab Wash. The Moab Wash lies adjacent to the Atlas site and represents a major seasonal hydrologic input. Ammonia is the major contaminant known to be directly associated with the tailings pile and was used as a primary variable for mapping. A differentially-corrected global positioning system was used to establish a sampling grid arranged in a regularly-distributed pattern (Figure 1). Groundwaters (e.g. water removed from a porewater pit dug in shoreline soil to 30cm depth within a meter of the shore) were collected as grab samples. Surface and bottom grab samples were collected at each grid intersection and refrigerated until analyzed for ammonia, metals, and radiochemicals. In addition, water samples were analyzed in-situ for temperature, pH, dissolved oxygen and conductivity using a Hydrolab Datasonde 3 Multiparameter Water Quality Instrument. Ammonia was analyzed on-site using a Technicon Autoanalyzer II System using a salicylate/nitroprusside colorimetric reaction (detection limit 0.1 mg/L total ammonia). Ammonia concentrations were calculated based on a 5-pt standard curve. Precision and accuracy were determined based on triplicate analysis of independent, certified Hach and Orion ammonia standards on each day. All samples were analyzed within 24 h of sampling. All ammonia concentrations were expressed as $\text{NH}_3\text{-N}$.

Water samples for analysis of dissolved metals (ICP-MS analysis of 30 metals) and radiochemicals (total alpha, total beta, and selected gamma constituents) were stored on ice (temp. $<4^\circ\text{C}$) and shipped via overnight mail to the National Air and Radiation Environmental Laboratory (NAREL) in Montgomery, AL. Analysis of metals and radiochemicals were conducted according to NAREL's U.S. Environmental Protection Agency (USEPA) methods.

Toxicity Testing:

Toxicity testing was conducted using larval fathead minnows and juvenile Colorado pikeminnow. Toxicity testing was conducted according to standard procedures as described by the U.S. EPA Effluent Toxicity Procedures (USEPA, 1994) and the American Society for Testing and Materials (ASTM, 1997).

Ammonia was delivered as ammonium chloride (J.T. Baker Chemical Co., Phillipsburg, NJ). Seven-day static renewal studies (Colorado pikeminnow) and 72 h static renewal studies (Colorado pikeminnow and fathead minnow) were conducted. Ten juvenile Colorado pikeminnow (approximately 60 days old) were exposed in 1000-ml beakers (800 ml test volume) containing one of two water sources: 1) Colorado River Water, or 2) CERC well water. This comparison was conducted to determine if the source of water (i.e. site-specific conditions) has an effect on the toxicity of ammonia. Approximately 200 L of Colorado River Water was collected from above the Moab Tailings Pile (i.e. low in ammonia) and was shipped on ice ($\leq 4^\circ\text{C}$) in polyethylene carboys

to the CERC. Water was stored at $\leq 4^{\circ}\text{C}$ until use. Four days prior to the study the 60-d old Colorado pikeminnow and larval fathead minnow were acclimated to respective test waters (i.e. either well or Colorado River water). Then, the toxicity tests were initiated. Ammonia was delivered in an 50% dilution series ranging from 0 - 64 mg/L (total ammonia) consisting of eight concentrations (e.g. 64, 32, 16, 8, 4, 2, 1, and 0 mg/L); each concentration was tested in triplicate. Larval fathead minnow (<48 h old) and juvenile Colorado pikeminnow (approximately 60 d old) were tested in side-by-side experiments in well water (72h exposure) using the same experimental design to test the effects of ammonia across species and water sources.

Exposure containers (1000-ml beakers containing 800-ml test water) were maintained at constant temperature (25°C) under a 16h:8 h light:dark photoperiod. Test concentrations were renewed daily by siphoning approximately 90% of water from each beaker prior to replacement with fresh solution. Total ammonia was measured daily in both newly renewed and removed test waters to determine the accuracy and precision of the ammonia exposures. The pH (Orion Model 940 Meter), dissolved oxygen (YSI Model 54 Meter), and temperatures (YSI Model 54 Meter) were measured daily in the 64, 16, 1, and 0 mg/L treatments prior to renewal (e.g. 24-h old exposure water). Un-ionized ammonia, the toxic form, was calculated based on temperature and pH according to Thurston et al. (1977). Alkalinity, hardness, and conductivity were measured in the 64, 16, 1, and 0 mg/L concentrations of both source waters at the beginning and end of the test. All water quality measures were conducted using CERC Standard Operating Procedures, which are developed in accordance with methods recommended by the APHA (1995) and manufacturers recommendations. Fish were fed brine shrimp nauplii *ad libitum* two times per day at least 6 h apart. At the end of the study the fish were euthenized using MS-222 and immediately dried (60°C) and weighed for final weights.

Similar testing procedures were used to determine the on-site toxicity of actual site water (e.g. containing ambient ammonia, metals, and radiochemicals) on juvenile Colorado pikeminnow. Samples from 9 sites (30 L total water per site), selected across a range of measured ammonia concentrations, were sampled and placed on ice. A 7-d static renewal study (25°C) was conducted in a mobile testing trailer maintained under a 16h:8 h light:dark schedule. Ten Colorado pikeminnow (90 days old) were tested in each of 3 replicate beakers per site. Mortality, ammonia, pH, dissolved oxygen, and temperature were determined daily. Alkalinity, conductivity, and hardness were determined every other day. Radiochemicals and metals were sampled once from each batch of site water. Fish were fed brine shrimp *ad libitum* two times per day at least 6 h apart. At the end of the study the fish were euthenized using MS-222 and immediately dried (60°C) and weighed for final weights.

Analytical Chemistry:

All analytical chemistry was conducted according to standardized procedures described by the USEPA (1994), ASTM (1997), or the American Public Health Association (APHA, 1995). Analysis of metals and radiochemicals was conducted by the EPA-National Air and Radiation Environmental Laboratory (NAREL; Montgomery, AL) according to standard USEPA procedures.

Data analysis:

Data were analyzed using the Statistical Analysis System (SAS 1990) to determine means and standard deviations. Either probit or non-linear interpolation were used to calculate LC50 values (Snedecor and Cochran 1969). Chronic incipient mortality (i.e. predicted 7, 14, 30, 60, and 90-day responses at 0.01, 0.05, 0.10, 0.50, 1.0, and 5% mortality) was calculated using the accelerated life testing procedures of Sun et al. (1995).

RESULTS**Review of historical water quality information:**

Previous water quality measurements performed by the Utah Department of Environmental Quality (UDEQ) have identified a site-specific source of contaminated ground water entering the Colorado River from beneath the tailings pile. The primary source was identified as the Moab Wash located at the northernmost area of the tailings pile. This source exceeds Water Quality Standards for at least five parameters, including total ammonia, dissolved manganese, dissolved molybdenum, and dissolved vanadium (Table 1) (UDEQ, 1996). In addition, levels of gross alpha and total uranium levels in groundwater below the Atlas site exceed those measured upstream (Table 1). These data were used to select the spatial mapping locations described below.

Spatial Mapping of Contaminants:

Field assessments of the distribution of ammonia concentrations in the Upper Colorado River adjacent to the Atlas Mill Tailings Pile were conducted over a 10-d period during August, 1998. Discharge during this period was approximately 3,000 CFS which is typical of the post snow-melt period when post-larval and juvenile Colorado pikeminnow are most likely to use shallow backwater areas such as the area adjacent to Moab Wash. For sampling locations refer to Figure 1.

Samples of ground water adjacent to the river exceeded Utah State Water Quality Standards for total ammonia by a factor of up to 500 under worst-case conditions. Groundwater

measured at the immediate confluence of Moab Wash with the Upper Colorado River contained 477 mg/L total ammonia (Figure 2). Total ammonia concentrations in shoreline groundwaters increased downstream of Moab Wash and were measured at 685 mg/L (100 m downstream) and 771 mg/L (200 m downstream), respectively (Figure 2). Note that these are undiluted groundwaters immediately adjacent to the stream.

Concentrations of total ammonia measured at nearshore areas (i.e. in the river at the bank-water interface) were measured at concentrations up to 224 mg/L at a station located 100 m downstream of Moab Wash (Table 2; Figure 3); this site was strongly influenced by groundwaters entering the river directly from soil fissures located at the tamarisk root line. Concentrations of total ammonia at the bank interface decreased at downstream locations (e.g. 200 m downstream, 35 mg/L; 300 m downstream, 19 mg/L; and 400 m downstream, 5 mg/L). Concentrations of total ammonia were also elevated at the 1-m (i.e. lateral distance from bank) locations (Figures 2 and 3). For example, concentrations of 33, 21, 14, 4, and <1 mg/L total ammonia were measured at 100, 200, 300, 400, and >500m downstream, respectively (Figure 3). Measurements taken at the 10-m lateral location exceeded 0.5 mg/L total ammonia at only one location (100 m downstream) (Figure 3). Thus, it was evident that ammonia concentrations greatly exceed State Water Quality Standards (4-d chronic level of 0.32 mg/L total ammonia assuming pH=8.5 and temperature of 25° C) during the sampling period but were confined to a zone of less than 10 m from the western shore (Atlas Side of River). Ammonia concentrations upstream of the Moab Wash were below detection limits. However, a shore pore sample was measured at 117 mg/L at a site 100 m above the Moab Wash (Figure 2) which may reflect some influence of groundwater due to lateral migration across the alluvial plain.

Total ammonia, un-ionized ammonia, metals, and radiochemicals are presented from a subset of the survey sites in Tables 3 and 4. Total ammonia concentrations in surface waters greatly exceeded the 4-day chronic Utah Water State Water Quality Criterion for total ammonia (0.32 mg/L total ammonia at pH=8.5 and T=25°C) adjacent to the Moab Wash and exceeded concentrations known to be toxic to Colorado pikeminnow (see below). Copper exceeded water quality criterion concentrations in shore pore water at two sites: Moab Wash; and the site located approximately 100 m below Moab Wash (Table 3). Manganese was measured at one surface water site near Moab Wash and at several pore water sites at levels exceeding the 40 ug/L criterion value (Table 3). Zinc exceed the water quality criterion levels at one porewater site below the Moab Wash (Table 3). Selected radiochemicals were elevated above background levels in both surface and ground water at two sites: Moab Wash and 100 m downstream of the Moab Wash (Table 4).

Nearshore water samples indicated that total ammonia concentrations were highly correlated ($r^2=0.98$, $p\leq 0.01$) with conductivity (Table 2). Temperature and dissolved oxygen remained within levels suitable for survival of Colorado pikeminnow. The levels of pH reached 8.69 in two areas near Moab Wash, and were measured at up to pH=9 in some backwaters during late evening. An increase of pH from 8.5 to 9 (at 25 °C) would result a doubling of the percentage of un-ionized ammonia (the toxic form) under these conditions (Thurston et al. 1977).

Toxicity testing:

Ammonia was toxic to Colorado pikeminnow in well water at 18 mg/L total ammonia (72h LC50) (Table 5) or 1.17 mg/L un-ionized ammonia (72h LC50 adjusted for pH and temperature) (Table 6). The standard surrogate species the fathead minnow was twice as sensitive as pikeminnow to total ammonia (9 mg/L 72h LC50) (Table 5) and to un-ionized ammonia (0.61 mg/L; 72h LC50 corrected for temperature and pH) (Table 6). Ammonia was toxic to both species within one hour at the high concentration of 64 mg/L total ammonia and within 12 hours at 32 mg/L total ammonia. The 16 mg/L concentration resulted in 20% mortality. The data further indicated that Colorado pikeminnow were only half as sensitive to ammonia (adjusted for pH and temperature) in Colorado River water (2.21 mg/L un-ionized ammonia; 72-h LC50) compared to fish tested in CERC well water (1.17 mg/L un-ionized ammonia; 72-h LC50) (Table 6).

Accelerated life testing procedures (Sun et al. 1995) were used with the data to predict the concentration of ammonia lethal to 0.01, 0.05, 0.10, 0.5, 1, and 5% of Colorado pikeminnow at various chronic exposure intervals (Table 7) to predict a no-effect concentration of ammonia. The chronic 90-day minimal effect level for mortality (i.e. projected 0.01% population mortality) was calculated to be 2.66 mg/L and 0.17 mg/L for total and un-ionized ammonia, respectively, in Colorado River water. These concentrations are frequently exceeded in the Moab Wash area (Tables 2 and 3; Figures 2 and 3). However, note that the current water quality criterion for ammonia for Class 3B waters of Utah (e.g. 0.32 mg/L total ammonia; 0.05 mg/L un-ionized ammonia at pH 8.5 and 25°C) appear to be protective of Colorado pikeminnow (Table 3).

On-site tests with environmental samples indicated that groundwater samples from below Moab Wash resulted in toxicity within 30 minutes due to the high level of ammonia (e.g. >500 mg/L total ammonia). Dilutions of these test waters were acutely toxic at 12.5% dilution which was the lowest dilution tested (Figure 4).

No surface waters were toxic to Colorado pikeminnow in the on-site test under the conditions tested. However, surface waters from four field locations between Moab Wash and 100 yds downstream (i.e. Moab Wash Surface 1; Moab Wash Surface 2; Downstream 1-50 m; and Downstream 2-100m) contained between 1.4 and 1.7 mg/L un-ionized ammonia (Figure 4) which approaches the threshold for mortality determined in laboratory toxicity tests (2.21 mg/L 72-h LC50 in Colorado River water). Many of the fish exhibited altered, punctuated swimming behavior during the test which indeed indicates that water from these sites was approaching levels inducing acute toxicity. Other areas containing higher concentrations of ammonia were located but not until after the tests were initiated (e.g., site 100 m downstream of Moab Wash; Tables 2 and 3).

Comparisons of the standard laboratory and on-site field tests revealed that fish were sensitive at the same approximate concentrations of ammonia. These results further indicate that ammonia is the primary contaminant of concern and that other contaminants (e.g. copper, zinc, and radiochemicals) were not present at individually toxic concentrations and further did not contribute to any apparent additive or synergistic activity of the site waters.

DISCUSSION

Ammonia appears to be the major contaminant of concern in the vicinity of the Atlas site. Ammonia primarily exists in two forms: un-ionized (NH_3) and the ionized ammonium ion (NH_4^+). The relative distribution of the two forms is controlled by pH and temperature. It is the un-ionized form of ammonia which is most toxic (USEPA 1999).

Acute exposure of fish to un-ionized ammonia can cause loss of equilibrium, hyperexcitability, and increased respiration in fishes (WHO, 1986). Chronic exposure of fish to un-ionized ammonia has been shown to reduce egg hatching, growth, and development, and can cause pathological changes in gills, liver, and kidney (WHO, 1986). Chronic data for the effects of un-ionized ammonia on razorback suckers and Colorado pikeminnow are not available. However, Mayes et al. (1986) determined that un-ionized ammonia decreased hatching and survival of larval fathead minnows at 0.26 mg/L. Thurston et al. (1986) determined that chronic exposure to 0.91 mg/L un-ionized ammonia resulted in decreased survival, growth, and reproduction of fathead minnows, and that at 0.21 mg/L exposures, adult fatheads commonly exhibited brain lesions. Further, Le-Ruyet Person et al. (1997) determined that 28-d exposure of juvenile turbot (*Psetta macrotica*) to un-ionized ammonia resulted in significantly decreased growth at concentrations as low as 0.1 mg/L due to decreased food intake. Pathological changes (e.g. gill hyperplasia; necrosis; and tissue disintegration) have been observed at un-ionized ammonia concentrations \leq 0.1 mg/L (Flis, 1963; Smith and Piper, 1974).

The results of this study indicated that Colorado Pikeminnow were sensitive to un-ionized ammonia at 1.17 mg/L (measured 72-h LC50). These data are similar to the results of Dwyer (1998) that indicated that un-ionized ammonia was toxic to juvenile razorback suckers, Colorado pikeminnow, and the standard surrogate test species the fathead minnow at concentrations as low as 1.040, 0.229, and 0.227 mg/L, respectively (7-d LC50, un-ionized ammonia) (Table 8). Calculated projections indicate that pikeminnow could be sensitive to un-ionized ammonia as low as 0.17 $\mu\text{g/L}$ (90-d LC0.01; calculated according to Sun et al. 1995). A comparison of these effects levels to measured exposure data in the immediate vicinity of the Atlas Mill Tailings Pile indicates that endangered fish populations are at risk to the effects of ammonia. However, existing water quality criteria for ammonia, if enforced, should be protective of Colorado pikeminnow.

Several dissolved inorganic constituents, including molybdenum and vanadium, have previously been measured at levels which exceed published State or National Water Quality Standards near the Moab Wash (Utah DEQ 1999; Table 1). However, concentrations of these constituents do not approach levels that have been demonstrated in the laboratory as acutely toxic to razorback suckers or Colorado pikeminnow. For example, Hamilton and Buhl (1997) studied the effects of vanadium on Colorado pikeminnow and razorback sucker and determined 96-h LC50s of 7.8 and 8.8 mg/L, respectively, indicating a margin of safety of well over 100. Molybdenum is toxic to fathead minnows at 360 mg/L (Eisler, 1989) and acute toxicities of other dissolved inorganics including uranium, boron, arsenate, and zinc generally exceed 10 mg/L (Hamilton, 1997; Hamilton and Buhl, 1997). However, data on chronic toxicity of these elements to Colorado pikeminnow and razorback suckers are not available. Although others have suggested that synergistic effects may be possible (Hamilton and Buhl 1997; Irwin et al. 1997) there was no apparent additive or synergistic activity in the on-site studies that we conducted.

Selenium concentrations in water adjacent to the Atlas Mill Tailings Pile range from 1-4 $\mu\text{g/L}$ as total selenium, which approaches the Water Quality Criterion of 5 $\mu\text{g/L}$ (USEPA 1987). Selenium is of particular concern in the western United States due to its propensity to undergo

organic transformations which lead to biomagnification in aquatic food webs (Hamilton, 1998). Concentrations of selenium above 5 ug/L have been shown to result in reproductive failure and developmental abnormalities in fish and birds (Hermanutz et al., 1992; Lemly et al., 1993). However, our data provides no indication that selenium from the Atlas Mill Tailings Pile is elevated to levels of localized concern.

Colorado pikeminnow populations now only occupy a portion of historical habitats in the Upper Colorado River Basin in Colorado, New Mexico, Utah and Wyoming (USFWS, 1996). The most important rearing area in the Colorado River for young-of-year Colorado pikeminnow is between Moab, Utah and the confluence with the Green River (USFWS, 1996). In a mark-recapture study of Colorado pikeminnow, 21 of 51 (41%) fish in this sampling reach were caught in the Moab Valley area between river miles 57 and 65 (Osmundson et al., 1997).

The Atlas Mill Tailings Pile site is located at the top of the Moab Valley at River Mile 64. The Colorado River Fisheries Project implemented an Interagency Standardized Monitoring Program in 1986 to monitor population trends of the Colorado pikeminnow and humpback chub (*Gila cypha*) in the Colorado River Basin. Low numbers of Colorado pikeminnow (between 1 and 28 fish) were consistently collected between 1986 and 1996 near the Atlas mill tailings site between river miles 68-49. Both adults and subadults were collected in Moab Wash and directly below the tailings pile. Young-of-year Colorado pikeminnow sampling between river miles 48-84 collected anywhere from 0 to 53 pikeminnow at any one site (Osmundson et al., 1997).

A potential spawning site for Colorado pikeminnow exists upstream of the Atlas site above Westwater Canyon. Larval Colorado pikeminnow are consistently found from above Moab to the confluence of the Colorado River with the Green River. This includes the Upper Colorado River section in the vicinity of the Atlas Mill Tailings Pile. The geomorphological and hydrological characteristics of the Upper Colorado River significantly change in the Moab Valley and produce shallow, low velocity nursery habitat for larval and young-of-year Colorado pikeminnow and significant numbers have been observed in this section of the river (UDWR, 1998). Further, the standardized monitoring data has shown that the average size of larval and young-of-year Colorado pikeminnow collected below the Atlas site is smaller than larval and young-of-year fish collected in the Green River system; however, at this time these differences cannot be attributed to the influence of ammonia from the Atlas Mill Tailings Pile (USFWS 1998).

SUMMARY AND RECOMMENDATIONS

Acute toxicity testing indicated that Colorado pikeminnow were sensitive to un-ionized ammonia at concentrations of 1.17 mg/L (72h LC50). Accelerated life testing procedures indicated that Colorado pikeminnow could be sensitive to 90-d chronic exposures as low as 0.17 mg/L un-ionized ammonia. However, the current Utah Water Quality Criteria for ammonia (e.g. 0.05 mg/L un-ionized ammonia at pH=8.5 and temperature of 25°C) appear to be protective of Colorado pikeminnow populations based on the limited data in existence. However, ammonia criteria concentrations and ammonia concentrations causing mortality of Colorado pikeminnow are exceeded for a distance of over 300 m in nearshore surface and porewaters. Levels of other constituents, including copper, manganese, and zinc are elevated in some areas but do not appear

to approach levels of concern.

Additional studies are needed. An Off-refuge Proposal, based on the results of this Quick Response Study, was submitted to the U.S. Fish and Wildlife Service and was successfully funded to continue studies for an additional 2 years. Ammonia levels in interstitial pore waters are suspected of being higher than surface waters. Studies planned for 1999 and 2000 are examining the significance of interstitial ammonia exposures (e.g., Ankley et al. 1990) due to the intimate contact of Colorado pikeminnow with the substrate following larval drift and deposition. In addition, chronic effects of ammonia on growth, mortality, and behavior of Colorado pikeminnow are being determined to refine the risk assessment and determine concentrations of ammonia that are protective at the individual level of population organization. The collective results of these studies will be used by the U.S. Fish and Wildlife Service in assisting the NRC and other Federal and State agencies in developing effective remedial action plans for the Site which will protect remaining populations of endangered fishes in the Upper Colorado River.

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LITERATURE CITED:

- American Public Health Association (APHA). 1995. Standard Methods for the Treatment of Water and Wastewater. APHA-AWWA-WPCF, Washington, DC.
- Ankley, G.T., A. Katko, and J.W. Arthur. 1990. Identification of ammonia as an important sediment-associated toxicant in the lower Fox River and Green Bay, Wisconsin. *Environ. Tox. and Chem.* 9:313-322.
- American Society for Testing and Materials (ASTM). 1997. Annual Book of ASTM Standards. Volume 11.05: Committee E47 on Biological Effects and Environmental Fate; American Society for Testing and Materials, Conshohocken, PA.
- Dwyer, F.J. 1998. USGS memorandum from Jim Dwyer to USFWS Utah Field Office Supervisor concerning ammonia toxicity to endangered fishes of the Colorado River Basin, January 23, 1998. 4 pp.
- Eisler, R. 1989. Molybdenum hazards to fish, wildlife, and invertebrates: A synoptic review.

- Biological Report 85(1.19). U.S. Fish and Wildlife Service, Laurel, MD.
- Flis, J. 1963. Anti-micohistopathological changes induced in carp (*Cyprinus carpio* L.) by ammonia water. Part II: Effects of subtoxic concentrations. *Acta Hydrobiol* 10: 225-238.
- Hamilton, S.J. 1997. Hazard assessment of inorganics to three endangered fish in the Green River, Utah. *Ecotoxicol. Environ. Safety* 30:134-142.
- Hamilton, S.J. 1998. Selenium effects of endangered fish in the Colorado River Basin. Pp. 297-313, in *Environmental Chemistry of Selenium*, Frankenberger, W.T. Jr. and Enggerg, R.A., editors, Marcel Dekker, Inc., New York, NY.
- Hamilton, S.J., and K.J. Buhl. 1997. Hazard assessment of inorganics, individually and in mixtures, to two endangered fish in the San Juan River, New Mexico. *Environmental Toxicology and Water Chemistry* 12: 195-209.
- Hermanutz, R.O., K.N. Allen, T.H. Roush, and S.F. Hedtke. 1992. Effects of elevated selenium concentrations on bluegills (*Lepomis macrochirus*) in outdoor experimental streams. *Environ. Toxicol. Chem.* 11: 217-224.
- Irwin, R.J., M. VanMouwerik, L. Stevens, M.D. Seese, and W. Basham. 1997. *Environmental Contaminants Encyclopedia*. National Park Service, Water Resources Division, Fort Collins, CO.
- Lemly, A.D., S.E. Finger, and M.K. Nelson. 1993. Sources and impacts of irrigation drainwater contaminants in arid wetlands. *Environ. Tox. Chem.* 12:2265-2279.
- Le Ruyet Person, J., R. Galland, A. Le Roux, and H. Chartois. 1997. Chronic ammonia toxicity in juvenile turbot (*Schophthalmus maximus*). *Aquaculture* 154(2):155-171.
- Mayes, M.A., H.C. Alexander, D.L. Hopkins, and P.B. Latvaitis. 1986. Acute and chronic toxicity of ammonia to freshwater fish: a site-specific study. *Environ. Tox. Chem.* 5:437-442.
- Oak Ridge National Laboratory/ Grand Junction (ORNL/GJ). 1998a. Supplemental modeling and analysis report, Atlas Corporation Moab Mill, Moab, Utah, dated February 5, 1998. Prepared for the U.S. Fish and Wildlife Service. 29 pp. + Appendices.
- Oak Ridge National Laboratory/ Grand Junction (ORNL/GJ). 1998b. Limited groundwater investigation of the Atlas Corporation Moab Mill, Moab, Utah, dated January 9, 1998. Prepared for the U.S. Fish and Wildlife Service. 53 pp. + Appendices.
- Oak Ridge National Laboratory/ Grand Junction (ORNL/GJ). 1998c. Tailings pile seepage model, Atlas Corporation Moab Mill, Moab, Utah, dated January 9, 1998. Prepared for the U.S. Nuclear Regulatory Commission. 14 pp. + Attachments.

- Osmundson, D.B., M.E. Tucker, B.D. Burdick, W.R. Elmblad, and T.E. Chart. 1997. Non-spawning movements of sub-adult and adult Colorado pikeminnow in the upper Colorado River. Final Report, March 1997. 29pp. *In: Studies of Colorado squawfish in the upper Colorado River. Final Reports, Recovery Implementation Program, U.S. Fish and Wildlife Service. Project No. 14, June 1997.*
- Smith, C.E. and R.G. Piper. 1974. Lesions associated with chronic exposure to ammonia. Pages 479-514 *in: The Pathology of Fishes*, W.E. Ribelin and G. Migaki (Eds.), University of Wisconsin Press, Madison, Wisconsin.
- Snedecor, G.W. and W.G. Cochran. 1969. *Statistical Methods*. Iowa State University Press, Ames, IA.
- Statistical Analysis System Institute. 1990. *SAS Procedures Guide, Volume 6, 3rd Edition*. SAS Institute, Cary, NC. 593 pp.
- Sun, K., G.F. Krause, F.L. Mayer, Jr., M.R. Ellersieck, and A.P. Basu. 1995. Predicting chronic lethality of chemicals to fishes from acute toxicity test data: theory of accelerated life testing. *Environ. Toxicol. Chem.* 14: 1745-1752.
- Thurston, R.V., R.C. Russo, and K. Emerson. 1977. Aqueous ammonia equilibrium calculations. Technical Report No. 74-1, Fisheries Bioassay Laboratory, Montana State University, Bozeman, MT.
- Thurston, R.V., R.C. Russo, E.L. Meyn, R.K. Azjdel, and C. E. Smith. 1986. Chronic toxicity of ammonia to fathead minnows (*Pimephales promelas*). *Trans. Amer. Fish. Soc.* 115:196-207.
- U.S. Environmental Protection Agency (EPA). 1999. 1999 Update of Ambient Water Quality Criteria for Ammonia. EPA 882-R-99-014, Cincinnati, OH.
- U.S. Environmental Protection Agency (EPA). 1987. Ambient Water Quality Criteria for Selenium. EPA 440/S-87-006, Cincinnati, OH.
- U.S. Environmental Protection Agency (EPA). 1994. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. EPA 600/4-89-001, Cincinnati, OH.
- U.S. Fish and Wildlife Service (USFWS). 1996. Draft multispecies recovery plan for four endangered fishes of the mainstem Colorado River. Denver, Colorado. 125 pp. + Appendices.
- U.S. Fish and Wildlife Service (USFWS). 1998. Revised Draft Biological Opinion for the

- Proposed Reclamation of the Atlas Mill tailings Site in Moab, Utah. 115 pp. + Appendices.
- Utah Department of Environmental Quality, Division of Radiation Control (UDEQ/DRC). 1996. Nov. 8, 1996 letter from William Sinclair at DEQ/DRC to Myron Fliegel, NRC. Re: Atlas Uranium Mill tailings Facility; State Water Quality Data Update. 5 pp. + Appendices.
- Utah Department of Environmental Quality (UDEQ). 1999. Utah Water Quality Standards. [Http://www.eq.state.ut.us/eqwq/r317-002.txt](http://www.eq.state.ut.us/eqwq/r317-002.txt). 39 pp.
- World Health Organization (WHO) Working Group. 1986. Ammonia. Environmental Health Criteria Volume 54. 210 pp.

Table 1. Metals and radiation measurements taken in the vicinity of the Moab Tailings Pile by the Utah Department of Environmental Quality on April 11, 1996¹ (UDEQ 1996).

Site	Total Ammonia (mg/L)	Un-ionized Ammonia (ug/L)	Molybdenum (ug/L)	Manganese (ug/L)	Vanadium (ug/L)	Gross Alpha (pCi/L)	Total Uranium (pCi/L)
CR ² Hwy 191	0.132	0.01	8	8	<40	12	3
Atlas Seep	219.00	5.85	1550	3470	96	720	825
CR 0.0 mi BS ³	3.57	0.09	10	14	<40	50	5
CR 0.25 mi BS	0.00	0.00	7	<5	<40	20	5
CR 0.5 mi BS	0.14	0.01	7	9	<40	19	3
CR 1.0 mi BS	0.13	0.01	3	50	<40	19	5
Criteria value ⁴	1.29	0.02	40	40	60	15	20

¹Data from Nov. 8, 1996 letter from Utah Department of Environmental Quality to Mr. Myron Filiegel, Uranium Recovery Branch, NRC, Washington, D.C.

²CR refers to within Colorado River.

³BS refers to distance below entry of seep into river.

⁴Criteria from various sources obtained from Utah Department of Environmental Quality (1999). Ammonia criteria for 4-day average concentration based on pH of 8.0 and temperature of 15 degrees C for Class 3B river. Criteria do not exist for fish and wildlife for all constituents; thus, sources and resource managers may vary. Data are for comparison purposes only.

Table 2. Water quality of nearshore samples (at shallow bank/water interface) at various locations during 1998 Quick Response Study. Refer to Figure 1 for station locations.

Site	Lateral Location (m from shore)	Total NH ₄ (mg/L)	Un-ionized NH ₄ (mg/L) ¹	pH	Temp (°C)	Conductivity (umhos)	Dissolved Oxygen (mg/L)
Island	nearshore	0	0	8.54	24.2	1057	6.74
East side 1	nearshore	0	0	8.47	26.6	1097	8.2
East side 2	nearshore	0	0	8.38	23.8	1067	7.41
Upstream 100 m	nearshore	0	0	8.58	25.0	1190	8.7
Upstream 200 m	nearshore	0	0	8.69	25.5	1200	8.3
Moab Wash	nearshore	21	4.7	8.69	25.5	1200	8.3
Downstream 100m	nearshore	224	18.9	8.03	31	7100	4.8
Downstream 200m	nearshore	35	2.84	8.12	28	2150	9.8
Downstream 300m	nearshore	19	1.75	8.22	26	1700	8.5
Downstream 400m	nearshore	5	0.58	8.38	24.5	1288	8.3
Downstream 500m	nearshore	1	0.15	8.51	24.3	1230	7.04
Downstream 700m	nearshore	1	0.13	8.47	23.9	1101	7.81
Downstream 800m	nearshore	0	0	8.48	23.59	1103	7.23
Downstream 900m	nearshore	0	0	8.35	24.5	1100	7.19
Downstream 1000m	nearshore	0	0	8.49	24.4	1009	7.6

¹Calculated based on pH and temperature (Thurston et al. 1974).

Table 3. Ammonia and metals measurements taken in the vicinity of the Atlas Mill Tailings Pile during the August 1998 Quick Response Study. Criteria are 4-day averages for wildlife in Class 3B waters.

Site	Total Ammonia (mg/L)	Un-ionized Ammonia (mg/L)	Manganese (ug/L)	Copper (ug/L)	Zinc (ug/L)
Surface Waters					
CERC well water reference	0.3	0.05	15	2	8
Colorado River Hwy 191 reference	0.2	0.03	22	4	8
Courthouse Wash reference	0.4	0.01	28	5	5
Center Island reference	0.0	0	1	3	40
East side river reference site 1	0.0	0	6	6	4
East side river reference site 2	0.0	0	7	4	3
Moab Wash site 1	21	2.9	53	6	8
Moab Wash site 2	224	42	24	5	25
Pore Waters					
Courthouse Wash pore	0.5	0.06	145	8	48
Center Island pore reference	0.0	0	38	4	18
East side river reference pore 1	0.0	0	6	4	18
East side river reference pore 2	0.0	0	8	5	8
Moab Wash pore	477	19.43	28	77	12
Moab Wash pore 100 m downstream	685	58.20	42	286	71
Criteria value ¹	0.32 ²	0.05	40	12	110

¹Criteria from Utah Department of Environmental Quality (1999) for Class 3B river and personal communications with Loren Morion (Utah DEQ). Criteria do not exist for fish and wildlife for all constituents, sources and resource categories may vary. Data are for comparison purposes only.

²4-d chronic average ammonia criteria based on pH of 8.5 and temperature of 25 degrees C for Class 3B river.

Table 4. Radiochemical measurements taken in the vicinity of the Atlas Mill Tailings Pile during the August 1998 Quick Response Study.

Site	Gross Alpha	Gross Beta	U234	U235	U238	Th227	Th238	Th230	Th232
Surface Waters									
Col. Riv. Hwy 191 reference	7	0	2.64	0.1	1.44	0	0	0	0
Courthouse Wash reference	0	40	3.21	0.1	0.2	0	0	0	0
Center Island reference	0	15	0.6	0	0.3	0	0	0	0
East side river reference site 1	0	18	3.2	0.2	1.9	0	0	0	0
East side river reference site 2	5.6	0	3.4	0.1	2.0	0	0	0	0
Moab Wash site 1	54	12	0.3	1.8	0.3	0	0	0	0
Moab Wash site 2	21	0	0.2	1.0	0.2	0	0	0	0
Pore Waters									
Courthouse Wash pore	7	0	1.0	0	0.6	0	0	0	0
Center Island pore reference	8	0	1.0	0	0.7	0	0	0	0
East side river reference pore 1	0	8	4.1	0.1	2.9	0	0.1	0.2	0.1
East side river reference pore 2	0	28	7.7	0.4	6.7	0	0.1	4.5	0.1
Moab Wash pore	905	601	0	0.3	0	0.1	0	0.3	0.1
Moab Wash pore 100 m downstream	170	116	0.1	0.5	0.1	0	0	0.1	0
Criteria value ¹	15	50	NA ²	NA	NA	NA	NA	NA	NA

¹Criteria from Utah Department of Environmental Quality (1999).

²Not available at time of report; pending from Utah Department of Environmental Quality.

Table 5. Sensitivity of Colorado pikeminnow and fathead minnows to total ammonia (mg/L) at various time intervals of exposure.

Species	water type	LC50 (95% C.I.)			
		9h	24h	48h	72h
Colorado pikeminnow ¹	ECRC well	25 (14-37)	21 (15-31)	19 (14-28)	18 (10-31)
fathead minnow ¹	ECRC well	24 (18-32)	19 (16-24)	13 (11-16)	9 (7-12)
Colorado pikeminnow ²	Colorado River	40 (32-64)	35 (32-64)	33 (32-64)	33 (32-64)

¹LC50 determined using Probit Analysis.

²LC50 determined using non-linear interpolation.

Table 6. Sensitivity of Colorado pikeminnow and fathead minnows to un-ionized ammonia (mg/L) at various time intervals of exposure.

Species	water type	LC50 (95% C.I.)			
		9h	24h	48h	72h
Colorado pikeminnow ¹	ECRC well	1.54 (0.96-2.50)	1.43 (1.01-2.09)	1.30 (0.92-1.88)	1.17 (0.69-2.07)
fathead minnow ¹	ECRC well	1.62 (1.23-2.17)	1.29 (1.05-1.60)	0.89 (0.73-1.08)	0.61 (0.45-0.84)
Colorado pikeminnow ²	Colorado River	2.65 (2.14-4.27)	2.33 (2.14-4.28)	2.21 (2.14-4.28)	2.21 (2.14-4.28)

¹LC50 determined using Probit Analysis.

²LC50 determined using non-linear interpolation.

Table 7. Chronic mortality of Colorado pikeminnow at various rates calculated using the method of Sur al. (1995). Data are based on the results of 7-d static renewal studies using 90-d old fish.

Time and Mortality	Total Ammonia			Un-ionized Ammonia		
	LCS0 (mg/L)	Lower Limit (mg/L)	Upper Limit (mg/L)	LCS0 (mg/L)	Lower Limit (mg/L)	Upper Limit (mg/L)
7 DAYS						
5%	15.38	10.98	19.76	1.02	0.73	1.32
1%	10.93	6.88	14.98	0.730751085	0.46	1
0.50%	9.44	5.6	13.21	0.63	0.37	0.88
0.10%	6.74	3.43	10.06	0.45	0.22	0.67
0.05%	5.83	2.75	8.91	0.38	0.13	0.59
0.01%	4.163	1.69	6.77	0.27	0.1	0.44
14 DAYS						
5%	13.62	9.34	17.91	0.91	0.62	1.19
1%	9.68	5.81	13.52	0.64	0.38	0.9
0.50%	8.36	4.77	12.01	0.55	0.31	0.8
0.10%	5.972	2.86	9.08	0.39	0.19	0.6
0.05%	5.165	2.29	8.04	0.34	0.15	0.53
0.01%	3.687	1.32	6.05	0.24	0.08	0.4
30 DAYS						
5%	11.918	7.78	16.09	0.79	0.52	1.07
1%	8.472	4.85	12.18	0.56	0.32	0.81
0.50%	7.323	3.94	10.72	0.48	0.26	0.71
0.10%	5.226	2.32	8.19	0.34	0.15	0.54
0.05%	4.52	1.86	7.19	0.3	0.12	0.47
0.01%	3.226	1.02	5.4	0.21	0.07	0.36
60 DAYS						
5%	10.556	6.61	14.51	0.7	0.44	0.97
1%	7.503	4.06	10.95	0.5	0.27	0.73
0.50%	6.486	3.27	9.702	0.43	0.21	0.64
0.10%	4.628	1.94	7.36	0.3	0.12	0.48
0.05%	4.003	1.51	6.44	0.26	0.1	0.43
0.01%	2.857	0.89	4.86	0.19	0.05	0.32
90 DAYS						
5%	9.832	5.92	13.62	0.65	0.39	0.91
1%	6.989	3.69	10.38	0.46	0.24	0.68
0.50%	6.041	2.93	9.14	0.4	0.19	0.61
0.10%	4.311	1.74	6.88	0.28	0.11	0.46
0.05%	3.728	1.33	6.04	0.24	0.09	0.4
0.01%	2.662	0.76	4.57	0.17	0.04	0.3
Criteria	0.8 ¹					

¹Criteria and un-ionized ammonia calculations based on pH of 8.1 and temperature of 25°C.

Table 8. Sensitivity of razorback sucker, Colorado pikeminnow, and fathead minnow to total and un-ionized ammonia determined by Dwyer (1998).

Species	7-d LC50 Total Ammonia (mg/L) ¹	7-d LC50 Un-ionized Ammonia (mg/L) ²
Razorback sucker	12.3 - >17	1.04
Colorado pikeminnow	4.44 - 22.6	0.229
Fathead minnow	7.34 - >17	0.277

¹ Range of 3 or more tests.

² Calculated from lowest total ammonia value measured.

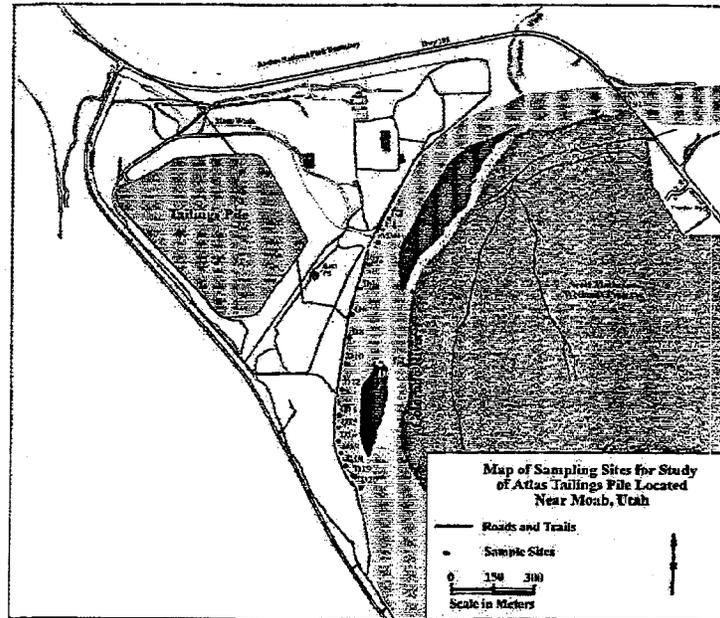


Figure 1. Map of sampling locations for 1998 Quick Response Study. Note that each sample location represents a 50-m increment upstream (U), downstream (D) of Moab Wash (MW). For example, D2 is located 100 m downstream of Moab Wash. Upstream (U) and east side of river (E) considered reference stations.

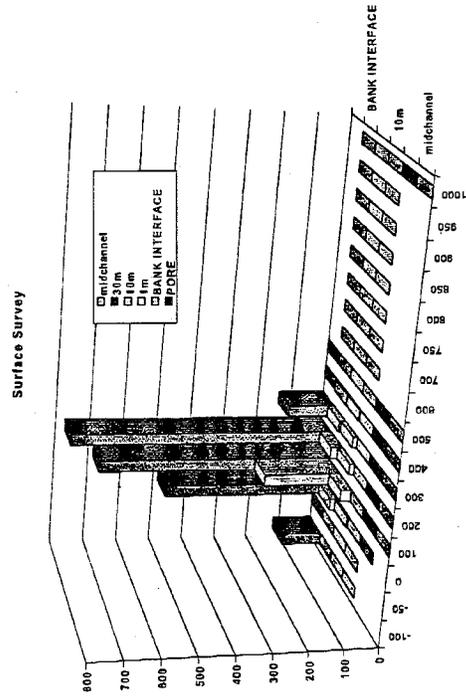


Figure 2. Spatial locations of total ammonia concentrations (mg/L) during 1998. Numbers on Y axis are ammonia concentrations. Numbers along X axis are meters upstream or downstream of Moab Wash. Numbers on Z axis are meters from the bank interface. Pore water samples were taken from pit on bank, located approximately 0.5 m from edge of river.

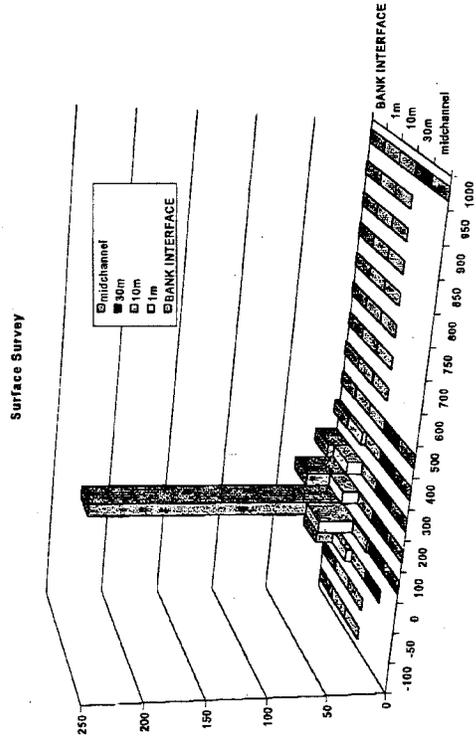


Figure 3. Spatial locations of total ammonia concentrations (mg/L) during 1998. Numbers on Y axis are ammonia concentrations. Numbers along X axis are meters upstream or downstream of Moab Wash. Numbers on Z axis are meters from the bank interface. Note that pore water samples are omitted from this graph.

Atlas Tailings Pile, Moab (UT)

- Q50. The Secretary's press release last month cited an estimate of \$300 million to relocate the Atlas tailings pile, yet the Department's budget for Fiscal Year 2001 requests only \$10 million for the relocation of the Atlas tailings pile.
- What is the Department's projection for the future oil and gas royalties that will come in from development of the Naval Oil Shale Reserve #2? Also, what are the other sources of funding which the Department intends to use to finance the relocation of the Atlas tailings pile?
 - With these various funding sources (\$10 million in direct appropriations and some indeterminate amount from the royalties), how long will it take for DOE to obtain the necessary \$300 million to relocate the Atlas pile?
- A50. While recoverable natural gas resources are unknown and there is no assurance of natural gas production, a 1994 United States Geographic Survey (USGS) study indicated the potential for gas production. Based on the study, the Department believes the Naval Oil Shale Reserve #2 has a potential gas resource of approximately 0.6 trillion cubic feet of natural gas, of which about 0.4 trillion cubic feet appeared economically viable for recovery at the time of the study. Assuming full recovery, at historical prices, the United States Government's potential future royalties from commercial production of the Reserve would be approximately \$80 to \$120 million.

Other than the future oil and gas royalties, the source of funds would be EM's annual Non-Defense Environmental Management Site/Project Completion appropriation account. This account includes the initial FY 2001 request of \$10 million to conduct characterization and assessment efforts, if Congress authorizes the Department to carry out cleanup of the Moab, Utah site.

The Department is estimating that it will take approximately 8-10 years to complete the project. It is not the intent of the proposed legislation that the royalties provide all of the funding for the Moab cleanup, or that all of the royalties be received during the period the cleanup is performed.

- Q51 What statutory authority does the Department have to transfer Naval Oil Shale Reserve No. 2 to the Ute Tribe?
- A51 The proposed transfer requires legislation.

Q52 What statutory authority does the Department have to transfer a position of the Reserve to the Department of Interior?

A52 DOE was authorized to transfer administrative jurisdiction and control over the Naval Oil Shale Reserve No. 2 to the Department of Interior by Public Law 105 - 261.

Q53 What statutory authority does the Department have to retain any portion of the proceeds of such a transfer, or any future royalties derived therefrom, as opposed to depositing such funds in the Treasury?

A53 The proposal requires legislation. Further, the proposed legislation would require royalties to be paid to the Treasury, if any remain, after being used for the remediation at the Moab site.

Q54 What statutory authority does the Department have to spend any funds, regardless of the source, to conduct any activities at the atlas tailings pile except for the reimbursement of private cleanup costs as specified by the Title X of the Energy Policy Act of 1992.

A54 The proposal requires legislation.

Atlas Tailings Pile, Moab (UT)

Q55. What role, if any, would the Nuclear Regulatory Commission and its trustee play in the cleanup of the Atlas tailings site if responsibility for the site is transferred to the DOE?

A55. Under the Administration's bill, the Nuclear Regulatory Commission (NRC) would regulate the Department's cleanup activities, in the same manner as for other sites that the Department cleaned up under Title I of the Uranium Mill Tailings Radiation Control Act.

The Administration proposes to terminate the existing NRC license at the site no later than one year after enactment of the legislation. During the transition period, the NRC's trustee would continue its current work. It is also proposed that the trust would retain title to the site until the site is sold after the cleanup is completed.

Atlas Tailings Pile, Moab (UT)

Q56 Does the Department propose to assume responsibility for any other uranium tailings sites?

A56. The Department is not proposing to assume responsibility for the cleanup of any other

uranium mill tailings site. However, under the authority of the Uranium Mill Tailings Radiation Control Act, DOE will have responsibility for long-term stewardship of all or most of the completed uranium mill tailings disposal sites.

Cleanup of Uranium and Thorium Processing Sites

Q57. DOE, in its FY 2001 proposal, requested a total of \$273 million for decontamination and decommissioning of its own facilities, yet requested only \$30 million for its Title 10 share of the costs of cleaning up private uranium and thorium processing sites. The budget acknowledges this amount only provides for "partial payment of approved uranium and thorium reimbursement claims."

- What is the current backlog of approved but unpaid Title 10 claims through Fiscal Year 1999?
- How does DOE plan to address this backlog of approved but unpaid claims to the uranium and thorium licensees?
- What amount of claims are currently pending review at DOE, and when will these claims be reviewed?

A57. As of the end of FY 1999, the Department had approved \$71.9 million in Federal related costs that have not been paid. Of this \$71.9 million, \$13.3 million is for uranium licensee costs that exceed the per-dry-short-ton ceiling for uranium. The Secretary, under current law, has the discretion to reimburse these licensee costs after the year 2005. In April 2000, the Department approved \$49.4 million in additional claims, that were submitted in May 1999. This brought the unpaid approved claims total to \$121.3 million. The Department in April 2000 reimbursed \$29.9 million to licensees, bringing the current unpaid approved claims amount to \$91.4 million (including \$17.7 million in discretionary reimbursements). Of the total \$30 million appropriated in FY 2000, \$100,000 was retained by DOE to reimburse the Defense Contract Audit Agency for its assistance in financial auditing of the licensee claims.

Current DOE planning assumes that the Title X program will be funded at \$30 million each year, which is consistent with Congressional appropriations for this activity for the past several years. If claims continue to be reimbursed at the \$30 million per year level, the backlog of unpaid claims will be fully reimbursed by FY 2004 or FY 2005. Under current law, funds for work performed after calendar year 2002 must be placed in escrow

no later than FY 2003. DOE estimates that up to \$40 million may have to be placed in escrow for this purpose. If the escrow payments are funded from the projected appropriation levels of \$30 million per year, the actual licensee reimbursements in FY 2002 and FY 2003 will have to be reduced by the amounts placed in escrow in those two years.

As of April 2000, all outstanding claims have been reviewed. Under the Department's current annual cycle for claim submission, review, and reimbursement, payments are made in April of each year and new claims are submitted by May 1 of each year.

QUESTIONS FROM REPRESENTATIVE WILSON

Stockpile Stewardship Program

Q1. Laboratory analysis determines that a minimum of \$4.83 billion is necessary to maintain the health of the stockpile stewardship program. The DOE budget request of \$4.6 billion is insufficient to meet the requirements of this program. How does DOE intend to meet the requirements of the stockpile stewardship program?

A1. The FY 2001 budget request adequately meets the requirements for the stockpile stewardship program. The FY 2001 budget request reflects a balanced program that addresses the Stockpile Stewardship's highest priorities for directed stockpile work, scientific and technical research, and infrastructure. This budget was developed through a lengthy process that considered and prioritized all known requirements within a funding envelope that is about 6% above the FY 2000 funding level. While there are always items which could not be accommodated, or those which could benefit from additional funding, it is our judgment that these items are of lower priority to the Stockpile Stewardship Program in the upcoming fiscal year.

One factor that may have contributed to the higher budget estimate offered by the laboratory analysis is a budget structure change in FY 2001 that transferred about \$100 million of emergency response and materials work formerly funded in the Stockpile Stewardship Program to other locations within the Department of Energy. On a

comparable basis with these activities included, the FY 2001 President's request would be \$4.7 billion

- Q2. What will be done to protect the core Science Based Stockpile Stewardship program from budget pressures like the NIF overrun, pit production, tritium production, production plant needs, etc.
- A2. All of the program activities you mention are key elements of the stockpile stewardship program - not activities that we view as competing with a core program. For the past several years, we have supported these high priority needs within the funding envelope established by the Administration and funded by the Congress. It is our intention to continue to do so in the future, but as always reserving the prerogative to propose discrete additional funding increments for extraordinary needs or initiatives that may arise in future years.

Safeguards and Security Budget

- Q3. Who will control the \$800 million security budget of the NNSA; how will that budget be structured?
- A3. In the FY 2001 budget amendment, approximately \$406 million has been identified for NNSA security. These funds are being requested in the new unified safeguards and security budget. The Office of Security and Emergency Operations will provide policy guidance on the security budget at a corporate level. The Lead Program Secretarial Officers, through the field office managers, will manage the implementation of these funds at their facilities. The budget is structured to include a specific account for NNSA operations. That account is further detailed into facility and functional areas. The functional area breakdown includes protective forces, protection systems, personnel security, cyber security, etc.

Laboratory Security

- Q4. Are there additional security requirements in the pipeline; if so, how will they be funded?
- A4. The Department continues to work toward improvements in security policy to ensure consistency in security practices throughout the complex, including the laboratories.

Additionally, security upgrades are underway at several facilities, for which funding had been previously identified. At this time, there are no significant cost increases associated with security policies being developed.

Laboratory Security

- Q5. Sandia is slated to receive only 2 percent of DOE's 9 percent FY 2001 budget increase. What is the justification for Sandia's relatively low increase compared to the larger DOE increase? With increased requirements and pressures on the stockpile stewardship program, Sandia will have a hard time meeting DOE expectations with this amount. Has DOE changed the requirements for Sandia National Laboratories, or are they expected to "do more with less?"
- A5. For programs under Defense Programs' purview, the estimated allocation of the FY 2001 budget request for Sandia increases 3.7 percent over the FY 2000 level. Increases of about \$32 million in Directed Stockpile Work and R&D Campaign activities are offset by planned decreases of \$10 million in funding for construction projects, and \$11 million in Readiness in Technical Base and Facilities.

The new business line strategy for Defense Programs associates clear milestones and deliverables with the budget request. These deliverables, as detailed in the supporting program plans, are the basis of our budget formulation decisions. This provides assurances to us and Congress that resource requests are closely linked to program expectations.

The budget allocation for Sandia is tied to expected deliverables and expectations. M&O contractors have been challenged the past several years to realize efficiencies in their program operations. When these expected efficiencies are part of the budget formulation process, such as reductions in contractor travel in FY 2000 and FY 2001, they are explicit and targeted. We do not believe that it is prudent management to ask contractors to "do more with less."

Uranium

Question 6: "Section 1014 of the 1992 Energy Policy Act requires you as Secretary of Energy

to have a continuing responsibility for the domestic uranium industry to encourage the use of domestic uranium." The section also requires you to report annually to Congress on action taken with respect to the domestic uranium industry.

What have you planned this year to encourage this use of domestic uranium?

Answer: Many important issues intersect at the juncture of the domestic uranium market including the continued success of the U.S./Russia agreement on HEU, which is very important to our national security objectives.

Congress and the Administration have taken steps to help the domestic mining industry. However, in order to resolve the complex issues facing the domestic uranium, conversion, and enrichment industries today, Congress, the Administration, and industry must work together to achieve mutually beneficial results that in the end will result in a stable market and viable domestic industry. Towards this end, the Department has recently met with uranium industry representatives to review their concerns, proposals, and to address the problems facing the domestic uranium industry. We are planning additional discussions on these issues involving representatives of the domestic nuclear fuel industries.

Uranium

Question 7: "Section 1014 of the 1992 Energy Policy Act requires you as Secretary of Energy to have a continuing responsibility for the domestic uranium industry to encourage the use of domestic uranium." The section also requires you to report annually to Congress on action taken with respect to the domestic uranium industry.

Has the department provided annual reports to Congress on the actions it has taken to encourage the use of domestic uranium?

Answer: Prior to 1996 the Department issued three reports to Congress concerning actions taken by the Department on behalf of the domestic uranium industry.

Since enactment of the United States Enrichment Corporation Privatization Act in 1996, the Department has analyzed and reported to Congress on the effects of the vital U.S./Russia Highly Enriched Uranium (HEU) Purchase Agreement on the

domestic uranium, conversion and enrichment industries in 1996, 1997, 1998, and 1999.

Uranium

Question 8: "Section 1014 of the 1992 Energy Policy Act requires you as Secretary of Energy to have a continuing responsibility for the domestic uranium industry to encourage the use of domestic uranium." The section also requires you to report annually to Congress on action taken with respect to the domestic uranium industry.

Please comment on the current status of the US/Russian HEU Agreement. Is this agreement in any danger of ending due to the price of uranium being below the cost of production?

Answer: The U.S./Russian HEU Agreement is not in danger of ending as a result of the price of uranium. As a result of a March 1999 Agreement between the U.S. and Russia, the natural uranium feed from 1997 and 1998 HEU Agreement deliveries has been purchased by the Department for stockpiling purposes for a ten-year period. In addition, the Department stockpiled another 28 million pounds of uranium per the Agreement that would otherwise have entered the market.

Currently, a key issue is the negotiation of the future pricing of the SWU component of the HEU contract between the United States and Russian executive agents for 2002 and beyond. Indeed, Russia acknowledges a continuing need for market-based contracts, as in the agreement on HEU feed. The Administration is actively supporting the negotiations and believes that market-based prices can and will be attained.

Additionally, Russia reached agreement with a Western Consortium of uranium producers for an option to purchase future natural uranium feed from the HEU Agreement. This arrangement further stabilizes the Agreement, and provides for the uranium to be introduced into the market in a reliable and measured fashion in order to maintain the integrity of the market.

Uranium

Question 9: Both Section 1013 of the 1992 Energy Policy Act and Section 3112(d) of the 1996 Privatization Act require a determination that any sales of DOE's surplus uranium shall not have an adverse impact on the domestic uranium industry. I understand that substantial DOE uranium inventories were transferred to USEC in 1998 when it was privatized. I also understand that USEC's disposition of the material transferred in 1998 has had an extremely material adverse impact on the price of uranium and on the domestic uranium producers.

Would you agree that DOE's sales and transfers of the federal stockpiles have exacerbated these adverse conditions?

Answer: Since 1993, the Department has entered into a number of agreements with USEC to meet its statutory requirements (i.e., under the Energy Policy Act of 1992 and the USEC Privatization Act of 1996) that resulted in the transfer of uranium. Approximately 140 million pounds $U_3O_8(e)$ was transferred to USEC by the Department to meet Energy Policy Act of 1992 requirements. This amount includes about 99 million pounds of $U_3O_8(e)$ that was customer-owned uranium transferred to the Corporation and nearly 23 million pounds $U_3O_8(e)$ that was Government-owned working inventory. Another 31 million pounds $U_3O_8(e)$ was transferred to USEC pursuant to the USEC Privatization Act requirement for the Department to transfer 50 metric tons of Highly Enriched Uranium and 7,000 metric tons of natural uranium to the Corporation.

While the Government was required by law to transfer a significant amount of uranium to USEC, the Department mitigated adverse impacts to the domestic uranium industry by restricting the rate by which 50 percent of the transferred material was introduced into the market.

At the time the uranium transfers were made, the market prices for uranium averaged about \$11 per pound from 1993 through 1998. Prior to privatization, USEC provided additional assurance through their Securities & Exchange Commission filings that they would sell uranium inventories in a way that would not impact the uranium market. Further, as part of the privatization process,

USEC provides assurances that it would dispose of its inventory in a gradual manner to maintain an orderly uranium market with existing market prices.

The Department agrees that USEC's uranium sales have, in combination with other factors, exacerbated the difficult market conditions faced by the domestic industry.

Uranium

Question 10: Both Section 1013 of the 1992 Energy Policy Act and Section 3112(d) of the 1996 Privatization Act require a determination that any sales of DOE's surplus uranium shall not have an adverse impact on the domestic uranium industry. I understand that substantial DOE uranium inventories were transferred to USEC in 1998 when it was privatized. I also understand that USEC's disposition of the material transferred in 1998 has had an extremely material adverse impact on the price of uranium and on the domestic uranium producers.

Does DOE have any ideas on how to reverse the adverse conditions the domestic uranium producers are confronting?

Answer: Many important issues intersect at the juncture of the domestic uranium market--including the continued success of the U.S./Russia agreement on highly enriched uranium, which is very important to our national security objectives.

Congress and the Administration have taken steps to help the domestic mining industry. However, in order to find viable solutions to the complex issues facing the domestic uranium, conversion, and enrichment industries today, Congress, the Administration, and industry must work together to achieve a stable market and viable domestic industry. Towards this end, the Department has recently met with uranium industry representatives to review their concerns, proposals, and to address the problems facing the domestic uranium industry.

We will continue to work with the nuclear fuel industry in order to improve our understanding of the challenges facing the domestic market.

Uranium

Question 11: The Administration has attempted to "assist" the Russians in dismantling their nuclear weaponry by allowing USEC to purchase the SWU component from the blended down material from the dismantled weapons at a price that is higher than USEC can produce it. The natural uranium component is available for purchase by a group of uranium producers and traders at a higher than market conditions currently bear, so this material is causing the market to remain artificially below production costs and is just overhanging the market.

Do you think having the domestic uranium market attempt to absorb all this material is the best way to disarm these weapons?

Answer: The Department believes that its national security objectives are best met by ensuring successful implementation of the HEU Agreement and limiting the introduction of material into the market so as to avoid significant adverse impact on domestic industry.

Russia and a Western consortium of commercial uranium producers reached agreement in March 1999 for the sale of a portion of the natural uranium feed component of the Russian deliveries. The uranium not purchased by the Western consortium is returned to Russia where it must remain in a stockpile or be sold by the consortium into long-term contracts. This agreement therefore benefits market stability.

Congress and the Administration have worked diligently to mitigate impacts on the domestic industry from the HEU Agreement. In this respect, the USEC Privatization Act limits the sale of the Russian-origin natural uranium for end-use in the U.S. In addition, Public Law 105-277 provided \$325 million for the Department to purchase the natural uranium component from the HEU Agreement of deliveries in 1997 and 1998 (about 28 million pounds) contingent upon Russia and the consortium reaching a long term commercial agreement on the natural uranium component. The Department also agreed to stockpile an additional 30 million pounds of uranium over the next ten years that otherwise would have been sold into the market. Thus the DOE removed some 58 million pounds of uranium

from the market for a decade, while the Agreement with Russia reinforced the orderly introduction of Russian natural uranium into the market, consistent with the USEC Privatization Act. This Agreement therefore benefits both the viability of the HEU Agreement and the domestic market.

The Department will continue to work with Congress and industry to ensure this vital Agreement is implemented in a manner that minimizes the adverse impact to the market while meeting our nonproliferation goals.

Uranium

Question 12: The Administration has attempted to "assist" the Russians in dismantling their nuclear weaponry by allowing USEC to purchase the SWU component from the blended down material from the dismantled weapons at a price that is higher than USEC can produce it. The natural uranium component is available for purchase by a group of uranium producers and traders at a higher than market conditions currently bear, so this material is causing the market to remain artificially below production costs and is just overhanging the market.

Wouldn't it be better for the federal government to take a more active role in absorbing the cost for this material?

Answer: Congress and the Administration have worked diligently to mitigate impacts on domestic industry from the HEU Agreement.

The USEC Privatization Act provided for the purchase and transfer to the Department of the 1995 and 1996 quantities of Russian uranium feed from the Agreement (about 14.3 million pounds), and substantially limited the sale of the future natural uranium feed in subsequent years. In addition, Public Law 105-277 provided \$325 million for the Department to purchase the natural uranium component of deliveries in 1997 and 1998 (about 28 million pounds) if and only if a long term commercial contract for dispositioning the uranium feed was reached. Such an agreement was concluded in March 1999, as a result of which the Department purchased the 1997 and 1998 natural uranium from Russia. And as

part of the Agreement the DOE will withhold from the market for 10 years this material and an additional 30 million pounds of DOE stocks of uranium that would have been sold into the market.

The Department will continue to work with Congress and industry to ensure this vital Agreement is implemented in a manner that minimizes the adverse impact to the market while meeting our nonproliferation goals.

QUESTIONS FROM HONORABLE JOHN SHIMKUS

- Q1. Why would the department send out a public service announcement regarding winterization of homes on March 17, 2000, just three days before Spring officially begins?
- A1. The "home winterization" public service announcement (PSA) was one of 19 PSAs included on a compact disk (CD) originally scheduled for distribution in January 2000; a series of production problems delayed the CD's actual release until March 2000. The other 18 PSAs on the CD were timely.
- Q2. How many pieces of mail on this topic were sent out? One what dates?
- A2. 3000 CDs were distributed, on or about March 17.
- Q3. Why was the material dated February 1, 2000, but post-marked March 17, 2000?
- A3. The CD is not dated "February 1, 2000." The label carries the designation "February, March, April 2000." CD labels are prepared separate from the CD itself; despite delayed production/distribution, it was not deemed advisable to pay to redo the label.
- Q4. Please identify CDR Communications, Inc.
- A4. CDR Communications, Inc. is under contract to the Department of Energy. This competitive/small business contract is managed by the Office of Intergovernmental and External Affairs, Office of the Assistant Secretary for Congressional and Intergovernmental Affairs. The contractor is responsible for recording, editing, duplication (on compact disks), and distribution of energy-related public service announcements.
- Q5. What account funds this activity? Please list this account's funding levels in the past five years.
- A5. The work for this activity is performed by a contractor. The contract funds expended over the last five years are provided in the chart below. The current contractor is CDR

Communications, Inc. and the contract is funded from the Office of Congressional and Intergovernmental Affairs Program Direction, Departmental Administration account.

CDR Communications, Inc. Funding Levels					
FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
\$22,425	\$20,500	\$22,920	\$49,000*	\$47,880	\$54,022

* The increase in funding was based on expanding the number of stations and changing the format to meet technological changes from cassettes to compact disks and to record the English versions in Spanish.

- Q6. What account funds the Department's Office of Intergovernmental and External Affairs? Please list this account's funding levels in the past five years.
- A6. The Office of Intergovernmental and External Affairs is one of several offices funded under the Office of Congressional and Intergovernmental Affairs, Departmental Administration account. Funding for the Office of Congressional and Intergovernmental Affairs is budgeted based on approved full-time equivalent (FTE) levels and there is no funding breakdown by office.

The table below reflects the total budget for the Office of Congressional and Intergovernmental Affairs.

DEPARTMENTAL ADMINISTRATION Congressional and Intergovernmental Affairs Program Direction (dollars in thousands)					
FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
\$4,682	\$8,268*	\$8,925*	\$4,337**	\$4,900	\$4,910
* Budget reflects combined organizations resulting from the FY 1996 merger of the Offices of Congressional and Intergovernmental Affairs and Public Affairs, into the Office of Congressional, Public and Intergovernmental Affairs (CP).					
** As of FY 1998, CP reorganized back to two separate offices: Congressional and Intergovernmental Affairs and Public Affairs.					

QUESTION FROM REPRESENTATIVE EHRLICH

Scrap Metal

- Q1. In the current decommissioning and dismantling of former nuclear weapons production and research facilities, what precautions is DOE taking to ensure that significant tonnages of scrap metal generated by these facilities, which may be radioactively contaminated, will not end up in consumer products?

- A1. In January, 2000, the Department suspended releases of metals with volumetric radioactivity. Also, on July 13, 2000, I directed the following steps to improve our policies for the management of scrap metals. First, I have suspended the unrestricted release for recycling of scrap metals from radiological areas within DOE facilities. The suspension will continue while the Department develops procedures through a public process to ensure that there is no release of scrap metals for recycling if contamination from DOE operations is detected using appropriate, commercially available monitoring equipment and approved procedures. Second, I have directed an expansion of our efforts to promote reuse and recycling within the DOE complex. Third, I have directed improvements to the Department's management of information about material inventories and releases.

Scrap Metal

- Q2. Would you agree that in order to satisfy the public's concern with the release of radioactive contaminated scrap metals the Nuclear Regulatory Commission should have health-based standards in effect?
- A2. The Department supports the development of national standards by the Nuclear Regulatory Commission (NRC) for volumetric and surface residual radioactivity. The Department has not yet developed a preference for whether the standards should be health or technology based but, in either use, they should be protective of worker and public health and the environment.

Scrap Metal

- Q3. The metals industries, including steel, nickel, copper, and brass, do not want radioactive contaminated material from the Department of Energy in their product and are taking stringent precautions to avoid letting it into their products. Has DOE considered the additional costs on the steel industry and other metals industries to keep radioactive materials out of their plants?
- A3. The Department has consulted with the metals industries on the issue of radioactive materials, and we understand and are trying to be responsive to their concerns. The principal direct cost to the steel industry is for the installation of portal monitors which are primarily intended to ensure a sealed radioactive source does not enter a steel mill. The Department has a program to track and take possession of some sealed sources, and we

are working to better ensure that the Department's activities do not adversely affect the metals industries.

Scrap Metal

- Q4. Recent public opinion polls show that consumers overwhelmingly prefer not to purchase products made of metals, made from scrap that came from nuclear facilities, even if the government says it's "safe." Has DOE considered the public outcry that can result from such a program?
- A4. The Department is aware of public concerns on this issue. The Department will continue to consider these concerns in the development and implementation of policies that are protective of human health and the environment and a responsible use of taxpayer funds.

Scrap Metal

- Q5. Has DOE considered the economic impact on the metals industry, including job losses, if consumers decide not to purchase metals products?
- A5. DOE has not conducted an analysis of this issue but has discussed the concern with representatives of the metals industries.

Scrap Metal

- Q6. We understand you have specifically prohibited the release of volumetrically contaminated metals from DOE sites. What about surface contaminated material?
- A6. The Secretary has appointed a DOE Task Force to examine the Department's policies regarding the release of all materials for reuse and recycling. The Task Force will make recommendations to the Secretary this summer. In the interim, our cleanup projects retain the option to release materials that meet the surface contamination release standards under DOE Order 5400.5, which is based on Nuclear Regulatory Commission Guidance (NUREG 1.86).

Scrap Metal

- Q7. Are you aware of any incidents where surface contaminated scrap has been rejected by metals producers and returned to DOE sites?
- A7. DOE has discussed this issue with the Department of Transportation and the Council of Radiation Control Program Directors. They have advised us that their database of some 2,000 detections of radioactive materials at scrap facilities does not contain any detections identified as DOE materials.

QUESTION FROM REPRESENTATIVE MARKEY

Recycled Radioactive Materials

Q1. The Department of Energy (DOE) recently decided to expand the scope of the task force that is reviewing DOE's recycling policies to consider all recycled materials in addition to volumetrically contaminated materials. What other types of materials does this include? Have there been unrestricted releases of this material in the past?

A1. The scope of the DOE task force included the release or re-use of all property such as scrap metals and other recyclable materials, tools, computers, desks, and other equipment. The Department and predecessor agencies have historically released relatively small quantities of operational materials using appropriate regulatory criteria since the Manhattan Project. The task force completed its work when, on July 13, 2000, I made several changes to DOE's policies regarding reuse and recycling. A copy of my decision has already been provided to your staff.

To summarize, in January, 2000, the Department suspended releases of metals with volumetric radioactivity. Also, on July 13, 2000, I directed the following steps to improve our policies for the management of scrap metals. First, I have suspended the unrestricted release for recycling of scrap metals from radiological areas within DOE facilities. The suspension will continue while the Department develops procedures through a public process to ensure that there is no release of scrap metals for recycling if contamination from DOE operations is detected using appropriate, commercially available monitoring equipment and approved procedures. Second, I have directed an expansion of our efforts to promote reuse and recycling within the DOE complex. Third, I have directed improvements to the Department's management of information about material inventories and releases.

Recycled Radioactive Materials

Q2. The DOE currently has a contract with BNFL to clean-up the Oak Ridge gaseous diffusion facilities that allows BNFL to recycle nickel from the Oak Ridge gaseous diffusion plant. In a January 12 statement, DOE issued a moratorium on the release of this nickel.

a. What does DOE plan to do with this nickel? Will DOE consider recycling the nickel within the DOE laboratories or within the licensee system of the Nuclear Regulatory

Commission? Has DOE provided sufficient funds to store this material until the final status is resolved?

b. What is the current status of the BNFL contract in light of the DOE decision to temporarily halt the release of the nickel? Does DOE anticipate litigation from BNFL?

- A2. a. The Department is currently negotiating with BNFL on the most effective way to implement the DOE decision that prohibits the commercial release of the nickel with volumetric residual radioactivity. The Department will not be able to announce its plans until the conclusion of these negotiations. The DOE has considered some options for recycling the nickel within DOE. The nickel will be safely managed until the final status is resolved.
- b. The Department has modified the contract to prohibit the commercial release of the nickel. The specific implementation of this prohibition is under negotiation, and DOE is not able to be more specific until we have completed the negotiations. At this time, the Department does not anticipate litigation.

Furthermore, on July 13, I suspended the release for recycle of scrap metals from radiological areas. The suspension will be in place until improvements are made in the Department's policies and management practices for scrap metals and other materials. This suspension will also have an impact on BNFL Inc. operations. Similar to the nickel issue, we will not be able to provide specific details on the impacts of the suspension until we have concluded negotiations with the contractor. However, there will be no impact on overall cleanup progress at Oak Ridge, and the materials will be managed safely in the interim. The Department is looking for opportunities for recycling within the Department's complex.

Electricity Reliability

- Q3a. The summer of 1999 was marred by reliability problem throughout Northeast, Midwest and South-Central States. In the interim report of DOE's Power Outage Study Team (POST), the team revealed. "[S]ome [power disturbances] were very similar to events that had occurred in the past... The problem is not that we have not learned from past outages. Rather, it is that in many instances, we have not taken the necessary steps to design and implement the solutions."

In the FY2001 budget, what initiatives and programs has DOE included to design and implement the solutions to prevent power outage problems in the coming summers?

- A3a. It should be recognized that the Department alone cannot assure electric reliability – this requires appropriate action by legislators, regulators, and stakeholders at the state and federal levels to establish policies that support reliability, adequate investment in generation and transmission capacity and sound operational practices within the industry, and research and development to provide the next generation of reliability technologies.

To establish a policy framework that supports reliability, Congress needs to pass comprehensive restructuring legislation and state and federal regulators need to design efficient, transparent and fair markets for electricity and supporting reliability services. In addition to being a voice for design of a competitive electricity market structure that will promote electric reliability, DOE can best promote reliability through a comprehensive program of research and development that is coordinated with the utility industry. DOE's FY2001 budget proposal includes funding for advanced technologies that will support electric reliability through the transition to a restructured industry and into the future.

The Department's Energy Grid Reliability Initiative coordinates the activities of five programs, four of which have direct application to electric reliability. These four are:

- Transmission Reliability - Focusing on real-time system controls and distributed resource integration that will provide the tools necessary for market operations and permit customer participation in the provision of reliability services in energy markets. (FY2001 funding request: \$8 million);
- Distributed Power - Focusing on strategic research and resolution of regulatory and institutional issues that will facilitate the integration of distributed power resources into the distribution system thereby reducing stress on the electric transmission system. (FY2001 funding request: \$3 million);
- Energy Storage Systems - Focusing on components and analysis that will facilitate the integration of energy storage devices to instantaneously correct power system disturbances and improve customer power quality. (FY2001 funding request: \$5

million); and

- Energy Infrastructure Protection - Focusing on identification of vulnerabilities to infrastructure attacks and failures and risk management, protection, and mitigation technologies. (FY2001 funding request: \$12 million).

The Department's energy efficiency programs also support electric reliability by reducing the demand on stressed energy delivery systems, especially during summer hot spells. The Department's relevant energy efficiency programs include development of efficiency standards for air conditioners and weatherization assistance to low-income households.

Electricity Reliability

Q3b. The POST also found that

"while energy markets have developed to the point where suppliers can respond to market signals, the same cannot be said for customers... This lack of demand elasticity results in emergency calls for public conservation and, in extreme cases, inadequate supplies to serve loads. A second point is that fact that market rules are still evolving, and market participants do not have a lot of experience in dealing with system emergencies."

Given the current lack of federal electricity restructuring legislation, what initiatives has the DOE included in the FY2001 request to address these problems? Can these problems be fully resolved without comprehensive federal electricity restructuring legislation?

A3b. Federal comprehensive electricity restructuring legislation is sorely needed in order to assure the continued reliability of our electric system. Twenty-five states and the District of Columbia have already acted to allow customers to choose their power supplier and almost all the remaining states are considering similar programs. While the nation is well on the way to achieving the benefits to consumers, the economy, and the environment that competitive electricity markets will bring, we have failed to update our reliability institutions to reflect the needs of emerging competitive markets. For example, with competitive markets, there is a pressing need for mandatory and enforceable reliability standards to improve system security. However, just providing for such standards will not be sufficient, since other policy changes to define the "rules of the road" must also be made to allow for adequate investment in generation and transmission capacity.

The introduction of well-functioning competitive markets should provide opportunities to enhance reliability. Ideally, customers, as well as energy providers, can contribute to reliability by having the opportunity to participate in markets for energy and supporting reliability services. While states have a role in assuring reliable electric service, there is also an important federal role: to improve the operation of power markets by providing leadership, direction and consistency across the country.

The DOE FY2001 budget request includes funding in the Policy Office for market analyses like the recently issued report on "Horizontal Market Power in Restructured Electricity Markets" (March 2000). This report identified instances where market power was exploited. Subsequent to the issuance of that report, we've seen the market operators in both New England and New York allege that energy providers manipulated markets for reliability support services. These types of market imperfections can degrade reliability.

Energy Efficiency

- Q4. The President's Committee of Advisors on Science and Technology (PCAST) released a report in June 1999 on the Federal Role in International Cooperation on Energy Innovation. In this report, PCAST recommended funding levels for various aspects of this program: foundations of energy innovation and cooperation, energy end-use efficiency, energy-supply technologies, and management of the government's activities in support of energy research, development and deployment.

You refer to these initiatives in your testimony. Since most of these initiatives involve developing technologies for export, could you describe how these initiatives would benefit domestic energy efficiency improvements?

- A4. The purpose of the International Clean Energy Initiative (ICEI) is to promote the greater exports of U.S. clean energy technologies for use in the rapidly growing overseas markets. ICEI's benefits to U.S. energy efficiency improvements are:
1. Lower unit-costs of energy efficiency technologies for U.S. consumers that would result from higher levels of production and export;
 2. Increased energy security and supply through reduced international pressure on world oil production.

The PCAST report noted that global energy technology markets are multi-billion dollars

per year in size and the opportunity to advance U.S. economic and energy interests through a greater effort to increase the U.S. share of them. The benefits PCAST noted include: helping to control costs of energy to U.S. consumers and industries; avoiding inflation and recession in the U.S. from oil price shocks; and lowering the costs of energy technologies for U.S. consumers. In addition, a significant cause of the recent rise of global petroleum prices has been attributed to the increased demand from the rapidly developing countries in Asia. Efforts like the ICEI to capture a larger share of the energy markets in these countries for U.S. energy efficiency and renewable energy technologies helps make them more affordable for U.S. consumers, and helps reduce the cost of U.S. energy imports. *"We believe that by acting now the United States can bring about lasting change in the global energy system, to the economic, environmental, and security advantage of the citizens of this country and of all the world."* John P. Holdren, Chair of the PCAST Panel on International Cooperation on Energy Research, Development, Demonstration, and Deployment.

Tritium

- Q5a. I continue to have concerns about using a civilian nuclear power plant to produce tritium for nuclear explosives, since it could undermine the traditional separation between "Atoms for Peace" and "Atoms for War" that is so essential to U.S. nuclear nonproliferation policy. Where does the DOE plan to use a TVA reactor for tritium production stand?
- A5a. DOE and TVA, in accordance with the interagency agreement that went into effect on January 1, 2000, are proceeding with preparations to use TVA's Watts Bar and Sequoyah reactors for tritium production. The first operating cycle to irradiate DOE-provided tritium-producing rods is scheduled to begin in October 2003 at the Watts Bar reactor. Irradiation is scheduled to begin at the Sequoyah I reactor in November 2003 and at the Sequoyah II reactor in the Fall of 2004.
- Q5b. Has the DOE entirely abandoned the option of using a dedicated linear accelerator for this purpose?
- A5b. In the May 6, 1999, *Consolidated Record of Decision for Tritium Supply and Recycling*, the Secretary selected the use of commercial reactors as the primary technology for tritium production and the accelerator alternative as the backup technology. The Department made clear in its budget submission that there is not sufficient funds in FY 2001 to support

both its basic stockpile obligations and continue the backup program for tritium production as originally planned. Development and demonstration of the accelerator technology is ongoing and the Department will continue the APT project with available resources in FY 2001, though it must suspend the design effort and replan further development to reflect funding realities. Additionally, DOE is considering a multi-mission accelerator program that would develop accelerator technology for possible uses in waste transmutation, isotope production, tritium production, and other applications.

Q5c. Has the DOE reassessed its future tritium needs in the light of the current arms reduction environment? For example, if the Russian Duma ratified START II and we moved to START III levels, what impact would that have?

A5c. START II was recently ratified by the Russian Duma but with conditions that require further action by the United States Senate before the treaty can go into force. Current U.S. policy requires a hedge to support a START I stockpile. Changes to that policy could push the initial tritium production date into the future and reduce the amount of tritium needed. This would result in lower production costs because the agreement with TVA requires DOE to pay only standby cost for the reactors in the event irradiation is postponed and fewer tritium producing burnable absorber rods (TPBARS) would be needed.

A Tritium Extraction Facility (TEF) is required under all START scenarios. While the amount of tritium required may vary under the scenarios, the Department believes that the design and construction of the TEF should proceed as there are no emerging technologies expected in the foreseeable future from which a delay in design and construction activities would benefit. Construction of the TEF is scheduled to begin at the Savannah River Site this summer.

Because tritium requirements are dependent on the numbers of each of several types of nuclear warheads in the stockpile, we cannot assess the impact of START III with any degree of accuracy. Our tritium production strategy using TVA reactors will accommodate changes, if any, to our production requirements.