Finally, the ''Africa: Seeds of Hope Act'' establishes a new and more reliable mechanism for providing emergency food aid overseas. Rather than waiting until emergencies arise to purchase food for donation, the bill establishes a humanitarian trust that buys commodities when they are in surplus and distributes them immediately when they are needed. This mechanism will allow for more timely and cost-effective responses to humanitarian crises.

Mr. President, a great deal of planning and hard work went into the passage of this legislation, not only by my colleagues and their staff members but especially by the private, voluntary organizations involved in sustainable development, such as Catholic Relief Services and Bread for the World. These organizations work directly with the African communities most affected by hunger and famine, and their input into this process was quite valuable. I commend them for their efforts, and I know they join me in welcoming the passage of this important piece of legislation.

VACANCIES REFORM ACT

Mr. LIEBERMAN. Mr. President, I want to add my voice to those supporting the passage of the Vacancies Reform Act as part of this bill. The Vacancies Reform Act addresses an enormously important issue: the need to protect the Senate's constitutional role in the appointment of Federal officers. The Constitution provides that the President's power to appoint officers of the United States is to be exercised ''by and with the Advice and Consent of the Senate.'' Unfortunately, in too many cases, over the course of the past several Administrations, the Senate's constitutional prerogatives have been ignored, through the Executive's far too common practice of appointing acting officials to serve lengthy periods in positions that are supposed to be filled with individuals confirmed by the Senate.

With the leadership of Senators BYRD and THOMPSON, we in the Governmental Affairs Committee have worked for a large part of this session to try to find a solution to this problem that reasserted the Senate's constitutional rights while at the same time avoided creating an unwarranted risk to the Government's good functioning. As noted in the Additional Views I and others signed to the committee's report, the bill the committee reported in July and the Senate considered in September went most of the way toward achieving these goals. Nevertheless, because it still contained a number of troubling provisions that, in my view, could have hindered the ability of the executive branch to carry out its duties, I could not in the end support that version of the bill.

Since the bill's floor consideration in September, all of the interested parties have worked hard and in good faith to address the concerns that remained about the bill, with the result that we now have a good bill, one that offers a measured and appropriate response to the Executive's longstanding unwillingness to comply with the dictates of the Vacancies Act. I am particularly pleased that the final version of the bill resolves one of my biggest concerns—that we not define who may serve as an acting official in a manner that, in some cases, effectively precludes anyone from serving in an acting capacity. The final version of the bill well addresses this problem by offering the President the option to choose any senior agency staff who has worked at the agency for at least 90 days to serve as the acting official.

So, Mr. President, let me once again thank Senator BYRD, Senator THOMPSON, and the others who have worked so hard on this bill. I am pleased that it soon will become law.

NUCLEAR PROLIFERATION CONCERNS WITH THE DEPARTMENT OF ENERGY'S PLANS TO USE A COMMERCIAL LIGHT WATER REACTOR TO PRODUCE TRITIUM FOR DEFENSE PURPOSES

Mr. THURMOND. Mr. President, I rise today to discuss an issue of the utmost importance to the safety and security of every American—the timely restoration of tritium production to maintain our nuclear deterrent. Some have attempted to focus this debate on cost. Mr. President, the most significant issue in this debate is not cost—it is the National Security of the United States.

For those who do not know, tritium is a radioactive gas and is an essential component of modern nuclear weapons. It decays at a rate of five-and-a-half percent per year, so in order to maintain our nuclear deterrent the tritium must be continually replaced. We have not produced tritium in this country since 1988, when the reactors at the Savannah River Site in South Carolina were shut down. Since that time the Department of Energy has examined countless options and technologies, but has not yet selected a new source. The end result of almost a decade of stalling is millions in wasted taxpayer dollars and no progress in meeting the requirements of the Department of Defense. If the Department of Energy is unable to begin the production of tritium before 2007, the impact will be unilateral U.S. nuclear disarmament. Mr. President, given the perilous international security environment that exists, we cannot afford to allow this to happen. The National Security interests of our Nation demand that we have a reliable source of tritium.

For a variety of reasons, the Clinton Administration has mismanaged this program by delaying implementation, issuing torrents of misinformation, and failing to acknowledge the true liabilities of the commercial light water reactor option. Make no mistake, through its actions, and inaction, this Administration has put our nuclear deterrent in jeopardy. This matter is of the utmost importance to the Nation and I feel compelled to raise my concerns with my colleagues here today.

The Department has narrowed its choices down to two options—the use of a commercial light water reactor at the Tennessee Valley Authority (TVA) or the use of a defense linear accelerator at a dedicated defense site. In my opinion, the only viable option, in terms of cost, reliability, ability to meet Defense Department needs, and maintain a high non-proliferation stance, is the Accelerator for the Production of Tritium (APT).

Over the past three months, a variety of inaccurate and misleading claims have been made regarding the APT option. To date, I have not come to the floor to correct these inaccuracies because my efforts were focused on completing work on the National Defense Authorization Act Conference Report. The enactment of this bill is essential to the armed forces of the United States. It provides the men and women who wear the uniform of our Nation with a much needed pay raise, it includes many vital readiness enhancements, and provides for the long-term modernization of our military. However, now that the Conference Report has been signed by the President and is law, I wish to take a few moments to voice my concerns with the Department of Energy's tritium production program.

Despite the flood of misinformation, one fact remains abundantly clear and irrefutable—that we must have new tritium production source very soon or leave our Nation without the nuclear deterrent that has kept the peace so well for the past 50 years. Mr. President, let me state this plainly. My fear is that the commercial light water reactor option may never yield the tritium needed to maintain our defense nuclear stockpile. The regulations of the Nuclear Regulatory Commission make a commercial reactor vulnerable to third party intervenor lawsuits and as a result, that litigation could easily block that facility from coming on-line before it ever produces the first kilogram of tritium for defense purposes. Only tritium produced in an accelerator, at a dedicated defense site, will assure that we have the tritium we need when we need it.

Mr. President, the cold war is over, but many dangers remain. In fact, the world may be a much more uncertain place today than it was during the height of the cold war. Despite President Clinton's rhetoric on stemming the proliferation of nuclear weapons and other weapons of mass destruction, we continue to see new and troubling proliferation trends. Recently, we learned that Iraq's nuclear program is much more advanced than previously thought. Earlier this year we witnessed the very public entry of two new nations—India and Pakistan—into the

nuclear weapons club. In the last few months we have witnessed other nations boldly demonstrate their ability to deploy missile systems capable of delivering nuclear or chemical/biological warheads onto U.S. soil.

Mr. President, these are very troubling developments indeed. All of these events demonstrate the need for the United States to maintain a viable nuclear deterrent. They also require consistent leadership on the part of the United States. Our policies on non-proliferation must be, as Secretary of State Albright said, ''unambiguous, decisive and clear.'' Unfortunately, the Clinton Administration's actions do not match up with its rhetoric. One prime example is in the area of tritium production.

By the end of this year, the Clinton Administration is required to identify its preferred method to produce new tritium. One of the options being considered is the use of a civilian nuclear reactor to produce tritium for use in U.S. nuclear weapons. Such a decision would end a five-decade-long U.S. policy which has been upheld by every President since Harry Truman. That policy states very clearly and unquestionably that the separation of civilian and military nuclear energy programs is in the best interests of the United States. It states that we should not try to turn civilian nuclear power plants into nuclear bomb plants.

Some are claiming that because the Tennessee Valley Authority is a government agency that producing nuclear weapons materials in their reactors is consistent with U.S. policy. I can tell you that it is not. The Atomic Energy Act, which governs this policy, was never intended to condone the use of commercial-use facilities to produce nuclear weapons materials. Additionally, the reactors that present the greatest threat to U.S. national security interests are, in fact, owned by the governments of Korea, Iran, Iraq, India, and Pakistan. The implications of changing our policy concerning civilian-use nuclear power reactors, despite whether they are owned by a government or a commercial entity, are far-reaching and potentially disastrous.

Anyone who is concerned about National Security and nonproliferation must acknowledge that designating a commercial-use reactor as the new tritium production source would signal to the world that it is now acceptable to use commercial-use reactors to produce materials for nuclear weapons. Let me say that one more time—it would tell the rest of the world that we believe there should be no distinction between civilian and military nuclear facilities.

Sending that message would also signal the end of commercial nuclear sales overseas. Now, every time a U.S. vendor attempted to sell a reactor to a foreign government, we would have to assess the potential of that plant becoming a nuclear weapons production site. The National Security of the United States demands that we operate at a higher standard—setting ourselves apart as a World Leader.

I am a proponent of nuclear power and I support finding alternative missions for nuclear reactors, but using a commercial reactor to create nuclear weapons materials would be devastating to the nuclear industry. If we allow this ill-conceived Clinton Administration proposal to go forward, we will no longer be able to preach from the bully pulpit on non-proliferation. We will no longer be able to tell other nations that it is unacceptable to forgo the use of their commercial reactors for military purposes. We will have crossed that formerly well defined boundary that every President knew should never be violated since the dawn of the nuclear age. This President, however, seems to feel that it is perfectly acceptable to say to the rest of the world, ''do as we say, not as we do.'' Mr. President, we cannot allow this Administration to take such an action without the intense scrutiny of Congress.

How could we go to the United Nations or the G–8 Summit and condemn nations like Iraq, Libya, Iran, North Korea, or any other nation that is so eager to establish a nuclear weapons program if we are not living up to our own standards? The simple answer is that we will not be able to do so, because civilian workers in a Tennessee Valley Authority commercial nuclear power plant will be producing weapons grade materials. Our moral authority will be lost in a cloud of hypocrisy.

Because this issue is essential to our National Security, I have asked the Secretary of Energy to re-examine the non-proliferation concerns associated with the commercial light water reactor option. I have asked him to personally confer with the Secretaries of Defense and State and with the President's National Security Advisor. I have also written Secretary of State Albright asking her to personally evaluate this issue and provide her assessments to Congress. I ask unanimous consent that this letter be printed in the RECORD at the conclusion of my remarks.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See Exhibit 1.)

Mr. THURMOND. For the past two years, I have expressed my concern with the Administration's plans to turn civilian reactors into materials production plants. I have communicated that concern to the Secretaries of Energy and Defense. As a part of last year's Defense Authorization Act, we included a provision that required the Administration to clearly state what proliferation risks were entailed in the commercial light water reactor option. That report was not delivered until well after both the House and Senate Defense Authorization bills were completed. It stated, however, that there were non-proliferation concerns with the use of commercial light water reactor for tritium production, but indicated that such concerns were ''manageable.'' Mr. President, given the volatile proliferation risks were are facing in South Asia, the Middle East, and other quarters of the globe, do we want to settle for a ''manageable'' non-proliferation policy? This finding is hardly a glowing endorsement of the reactor option being considered by the Clinton Administration. I suggest that today's international security environment requires U.S. non-proliferation policies to be absolutely unquestionable.

To establish any other policy for the United States will not go without consequences. The series of nuclear tests carried out by the Governments of India and Pakistan is clear evidence that the Clinton Administration's credibility with the rest of the world is being questioned when it comes to non-proliferation matters. This Congress has to step up to this issue and state that civilian and military nuclear programs cannot and will not be mixed.

In addition to claiming that there is no problem with producing tritium in a non-defense facility some proponents of the reactor option have made many false statements concerning the costs of the different options.

First, many point to a review of the United States nuclear weapons program conducted by the Congressional Budget Office at the request of the Clinton Administration as proof positive of the lower cost of the reactor option. This initial review, conducted over a year and a half ago, included an assessment of DOE's tritium program only as a cursory footnote in the larger report. The CBO did not assess the current modular accelerator design, which everyone agrees is dramatically cheaper, nor did the CBO conduct any assessment of the proposed cost to complete the reactor option.

Several months ago, the CBO attempted to justify its earlier report by updating its findings. The result was an even more inaccurate depiction of the two tritium production options. This report was riddled with inaccuracies. In my response to this flawed report, I identified a number of deficiencies in the CBO analysis. I ask unanimous consent that my letter of September 2 be printed in the RECORD at the conclusion of my remarks.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See Exhibit 2.)

Mr. THURMOND. Here are just a few of the glaring errors. CBO did not consider the independent cost evaluations conducted on the accelerator design and construction estimates. CBO did not even mention the significantly lower cost modular accelerator design, which is the design currently being considered by DOE. Their report made no mention of the ancillary benefits of the accelerator that could help lower its operating cost. There was no contingency cost assessed for the reactor-based options, yet the estimated cost

for the accelerator was increased an astounding $500 million without any justification. There was no consideration of TVA's sizable debt service costs in the reactor option. The Tennessee Valley Authority currently has an outstanding $4.6 billion debt on the incomplete reactor that would have to be recovered over the life of the reactor option. This would dramatically reduce the revenue stream projected for the reactor option. Current law requires that TVA recuperate such costs on a schedule and basis that advantages the ratepayers. In short, if the gross revenues projected by TVA fall short or operating expenses cost more, TVA would face a legal conflict—fulfill its contractual obligation to pay DOE a share of gross revenues or fulfill its legal obligation to recover the costs. CBO did not account for this liability. There were no management and support or startup cost included in the reactor option.

The CBO analysis also ignored many programmatic requirements found in the Department's August 1998 Draft Environmental Impact Statement for the Production of Tritium in a Commercial Light Water Reactor (EIS). The EIS states that ''at least two reactors would be needed'' and further states that ''DOE could use as many as 3 reactors.'' The CBO report should have included additional costs in the reactor option to account for the requirement to operate at least two reactors if a reactor-based option were selected. The entire reactor-based option rests on whether or not it can meet our nuclear defense needs for tritium. The CBO failed to address this fact. It should not have been ignored and therefore undermines the credibility of the entire analysis of the commercial reactor option.

The CBO report failed to include any contingency costs in the reactor option to account for TVA's poor record in completing large reactor projects. The average TVA cost overrun on reactor construction projects is well over 150 percent. This fact was also ignored by the CBO analysis.

These are but a few of the deficiencies in the CBO cost analysis. Yet, this is the report that some are relying on when they tell you that the reactor is the lowest cost option. Well, I don't buy that. I also don't put much stock in the argument that says the reactor option can't cost more, because it is a fixed price contract. Given the Department's recent setbacks in fixed price contracting, it is inconceivable that DOE or CBO would simply accept a ''fixed price'' offer at face value and not consider the issues I have just raised. Many are aware of the fixed price contract that DOE signed at the Idaho Pit 9 facility. Those who are aware of this contract know that DOE spent several hundreds of millions of dollars on this cleanup project and not one square inch of that facility has been cleaned up. Three years later, that matter is still in dispute. We cannot afford to allow such delays to threaten an activity as vital as tritium production.

I have asked the CBO to re-examine this matter and provide a thorough and complete assessment to Congress by early 1999. In addition, I have requested that the GAO provide a complete and independent review of the competing tritium production options. I ask unanimous consent that my letters of August 26 and September 4, 1998, be printed at the conclusion of my remarks.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See Exhibits 3 and 4.)

Mr. THURMOND. I have just told you about the CBO review. Now let me tell you about an analysis conducted by the Congressional Research Service which was an exhaustive and complete examination of both the reactor and accelerator options. This assessment was released June 18, 1998, by the defense staff at the Congressional Research Service. This report found that the reactor and the accelerator options are ''competitive on a cost basis.'' The CRS report states that the cost of the reactor option ranges from $2.5 billion to $3.7 billion, while the cost of the accelerator ranges from $2.5 to $2.9 billion. In other words the accelerator could cost less than the reactor.

The CRS assessment is the most in depth assessment conducted on the costs of the two tritium options to date. It represents the most recent information available and it says the costs of the reactor and the accelerator are comparable, that there are no technical risks associated with the accelerator, and that the accelerator actually has a greater chance of returning revenue to the U.S. Treasury than the reactor.

The revenue producing potential of the accelerator is one of the many things that the CBO assessment failed to account for fully. Because the accelerator will operate on a continuous basis, it is possible to use a portion of the accelerator beam to produce much needed medical isotopes which can be used to treat prostate, breast, and many other types of cancers. The production of these isotopes will have no impact on the facility's tritium production. This ''swords to plowshares'' approach could, conservatively, raise $100 or $500 million per year in revenue for the Federal government. This compares with the $25 to $100 million annual revenue projected to be available from the reactor option, and the accelerator produces no hazardous legacy materials like spent nuclear fuel while at the same time maintaining our strong non-proliferation policies.

It is critical that the facts about the options for producing tritium are known. Choosing to produce this nuclear defense material in a commercial light water reactor will sacrifice our position as the world leader on this issue. The accelerator is the right option for our Nation.

I have mentioned a few of the advantages of the accelerator, but the real advantage is that it is the technology of the future. Unlike the reactor option, the accelerator generates no nuclear waste, cannot threaten surrounding communities, and requires no hazardous materials to be shipped across the country.

In fact, the accelerator may actually help destroy the ever growing volumes of spent nuclear fuel and other nuclear wastes. The accelerator could be used in a full-scale demonstration of a process known as the accelerator for the transmutation of waste (ATW). This innovative new process could reduce by 95 percent the volume of high level nuclear waste currently planned to be buried in a repository in the Nevada desert. The ATW would also generate electricity in the process.

As I previously stated, the accelerator could be used to create medical isotopes. The U.S. has very little indigenous isotope production capability. The accelerator will make it possible to create revolutionary new medical treatements to treat a wide variety of cancers. For example, one isotope that can be created in the accelerator would allow victims of prostrate cancer to be fully treated without any surgery. The radioactive medicines created in the accelerator could be designed specifically to attack only cancerous cells, obviating the need for surgery or radical, whole body radiation treatments. New treatments could also be developed for breast and other terminal cancers. In addition to medical isotopes, industrial isotopes can be created which have important and beneficial applications for both our National Defense and NASA.

There are many other uses for the accelerator that could enhance the lives of citizens throughout the country. These ancillary benefits are achieved without the generation of a single cask of spent nuclear fuel, without any compromise in our stance against the proliferation of nuclear weapons, and without any added cost to the Department of Energy or Department of Defense.

It is because of these concerns that I rise to express my opposition to the use of a commercial facility to produce tritium for defense purposes and wholeheartedly endorse the APT as the preferable choice to protect the National Security interests of the United States.

EXHIBIT 1

U.S. SENATE,
Washington, DC, September 23, 1998.

Hon. MADELEINE K. ALBRIGHT,
Secretary of State, Department of State, Washington, DC.

DEAR SECRETARY ALBRIGHT: The recent nuclear arms race in India and Pakistan has underscored the need to maintain the most vigilant nuclear nonproliferation programs and policies. You validated that sentiment on June 3, 1998, when you stated, ''American leadership should be unambiguous, decisive, and clear.'' In light of your strong stance against nuclear proliferation, I would appreciate your personal position on this important National Security issue.

A cornerstone of our nonproliferation policy for the past 50 years has been the strict

separation of the commercial and defense nuclear programs in the United States. As the Atomic Energy Act, Section 57e confirms, materials made for ''nuclear explosive purposes'' may not be produced in a commercial facility.

The policy of separating commercial and defense facilities in the production of nuclear weapons materials is now being jeopardized. As you may know, tritium gas is a radioactive material used to boost the explosiveness of a nuclear weapon. The United States produced tritium at a defense-only facility for over 40 years. We have not produced any tritium since 1988, relying on a large stored quantity. Because tritium decays over time, the United States will need a new source of tritium by 2005, in order to meet the level allowed by the START I treaty. Without this material the weapons of our Nation's nuclear arsenal are useless.

During the FY 1993 budget process, Congress directed the Department of Energy (DOE) to examine possibilities of a new source for tritium. DOE has since adopted a dual-track strategy to investigate a Commercial Light Water Reactor option and an Accelerator for the Production of Tritium option. The Commercial Light Water Reactor option being considered is the completion of the Bellefonte reactor owned by the Tennessee Valley Authority. The Accelerator would be built at a DOE facility, the Savannah River Site—the site which produced tritium until 1988.

In the FY 1998 Defense Authorization Act, Congress requested that the Department of Energy take the lead to identify and assess any policy issues associated with the various reactor options for the production of tritium for national security purposes. In July 1998, in conjuction with the Department of State Arms Control Office, the Department of Defense, and the Nuclear Regulatory Commission, the DOE issued a report entitled ''Interagency Review of the Nonproliferation Implications of Alternative Tritium Production Technologies Under Consideration by the DOE.'' This report assessed the proliferation risks associated with producing tritium in a commercial light water reactor and concluded that these risks were ''manageable.'' Further, the report cites a number of examples in an attempt to show that the separation of civilian and military facilities has not been strictly upheld.

First, I believe that any new policy which could inadvertently result in the proliferation of fissile materials cannot be classified as ''manageable.'' Second, all of the examples of dual-use facilities described in the report involved deriving a civilian benefit from a defense facility. Using facilities developed initially for military purposes and then converting them to civilian use has found ready acceptance in the past. I embrace the concept of peace coming from war, but not the reverse.

Given today's international security environment, would you please outline how the United States would defend a ''manageable'' proliferation risk?

Do you believe that abandoning the 50 year separation between commercial and defense nuclear facilities in regards to producing nuclear weapons material and implementing the new policy of producing nuclear weapons materials in a commercial light water reactor will undermine our moral authority to press for the strongest possible nonproliferation regime?

As you know, India claims to have detonated a boosted nuclear weapon, which would require the use of tritium. This claim raises the question, did India produce tritium in its government owned, commercial reactors? Moreover, if India is able to produce tritium in a commercial reactor, supposedly under IAEA inspection, could they also have successfully diverted fissile material from the same reactor? Do you believe that changing the existing United States policy of separating civilian and military nuclear facilities in regards to producing nuclear weapons material will validate the India weapons program and send a signal to other nations that the United States is not opposed to the use of government owned, commercial reactors for the production of nuclear weapons materials?

The United States has spent hundreds of millions of dollars to prevent the production and spread of weapons-usable materials such as plutonium and highly enriched uranium. Do you believe we would lose this important investment if we initiate a new policy which could embolden threshold nuclear states to embark on new fissile material production programs in commercial nuclear plants?

I contend that relying on commercial nuclear reactors to supply nuclear materials for our warheads will cross a boundary that all U.S. Presidents from Harry Truman to George Bush knew should never be violated. Furthermore, I suggest that given the international security environment we live in today, our Nation's nonproliferation policy should be absolutely unquestionable. Our leadership in the area of nuclear non-proliferation will be emulated around the World. The consequences of our example will be solely ours to bear.

I have worked to preserve the security of our Nation throughout my career as a United States Senator. As Chairman of the Senate Armed Services Committee one of my top priorities has been the timely resumption of tritium production at a facility that is both cost-effective and politically defensible. I believe the National Security of the United States and our leadership in the international community depends upon maintaining the 50 year policy which separates commercial and defense facilities for the production of vital nuclear materials.

Due to the many sensitive foreign policy issues facing the United States, such as the nuclear reactor project in North Korea for peaceful purposes, I believe we need to be very cautious in changing an established United States policy which might send mixed signals to countries who depend upon our consistent leadership. Again, I would appreciate your personal position on this matter as well as your response to the specific questions I have raised in this letter. I look forward to hearing from you soon.

With kindest regards and best wishes,

Sincerely,

STROM THURMOND.

EXHIBIT 2

U.S. SENATE,
Washington, DC, September 2, 1998.

MS. JUNE E. O'NEILL,
Director, Congressional Budget Office, Washington, DC.

DEAR MS. O'NEILL: I am writing to respond to your August 27, 1998 report on the Department of Energy's (DOE) tritium production options. I have reviewed the report and find it to be incomplete and based on preliminary, unverifiable information. As such, I consider the conclusions of the report to be inaccurate. I am disappointed that the Congressional Budget Office appears to have fallen far short of its customary high quality work.

First, let me say that the cost figures presented for the Commercial Light Water Reactor (CLWR) options have not been validated by the Department of Energy's Chief Financial Officer and are based solely on preliminary contractual discussions between DOE and a potential vendor. Additionally, while the Accelerator for the Production of Tritium (APT) option has been subjected to numerous independent cost evaluations (ICE) for all design and construction costs, none of the reactor-based options have been subjected to an ICE review. Your report failed to note the tentative nature of the CLWR cost figures. In the case of the irradiation services option, there is not even a valid proposal. The potential vendor for that option, the Tennessee Valley Authority (TVA), withdrew its proposal to provide such services many months ago. Your report failed to note this fact as well.

Second, your report left out many critical pieces of information, including the following:

1. Your report states, ''All of the options assume that DOE must make enough tritium to support a nuclear stockpile of the size allowed by the START I treaty.'' However, the analysis ignored many programmatic requirements found in the Department's August 1998 Draft Environmental Impact Statement for the Production of Tritium in a Commercial Light Water Reactor (EIS). The EIS states that ''at least two reactors would be needed'' and further states that ''DOE could use as many as 3 reactors,'' to produce the tritium required to support a START I stockpile. The CBO report should have included additional costs in the CLWR option to account for the requirement to operate at least two and possibly three reactors in order to satisfy the START I requirements. Your failure to do so produced an invalid comparison.

2. There was no mention of the significantly lower cost of the modular APT design currently being considered by DOE, nor was the option of pursuing a modular APT even mentioned. The cost of constructing the modular APT is equivalent to the cost of completing the Bellefonte reactor and would still allow the United States the option to meet a START I production level in the future should START II not be ratified.

3. There was no mention of the fact that the TVA option assumes full up-front, block funding over a one or two year period. It would be virtually impossible for the DOE Office of Defense Programs to make two $1 billion payments to TVA in fiscal years 2000 and 2001, therefore the cost assumptions on the Bellefonte option are invalid.

4. There was no mention of any ancillary benefits of the APT. The APT would be highly effective in conducting research in high energy physics, medical treatments, and waste management. It could also directly support DOE research or transmutation of high level nuclear waste. Not only could these programs be a source of additional revenue for the APT, but such activities would also serve the larger public good.

5. There was no mention of the independent cost evaluations that have been conducted for the APT design and construction costs.

6. There was no consideration of TVA's sizable debt service costs in the total estimated cost of the Bellefonte option. Your report correctly asserts that TVA's $4.6 billion outstanding debt on the Bellefonte plant must be recovered through gross revenues at the plant. Ultimately, TVA rate payers will pay the full cost of this debt and the associated interest costs. Current law requires that TVA recuperate such costs on a schedule and basis that advantages the rate payers. In short, if the gross revenues projected by TVA fall short or operating expenses cost more, TVA would face a legal conflict. It would either have to fulfill its contractual obligation to pay DOE a share of gross revenues or fulfill its legal obligation to recover the costs on behalf of the rate payers.

7. There were no management and support or startup costs included in the Bellefonte

cost projections despite TVA's poor facility start up record. The report added $500 million to the APT cost to account for such activities. It is clear that DOE will incur added management, operations and startup costs for the CLWR. If these costs are not included for the TVA option, they should not be included for the APT project.

8. The CBO report assessed the APT option a 35% contingency cost penalty to account for DOE's poor record in completing large construction projects on time and within budget. The report accurately states that the average overrun for large DOE construction projects is 50%. However, the CBO report did not include a similar contingency penalty in the TVA Bellefonte cost estimate, despite the fact that according to the 1995 Congressionally mandated TVA Integrated Resource Plan, the average TVA cost overrun on reactor construction projects ranged from 100 percent to 230 percent. In addition, the cost estimates for the CLWR tritium extraction facility and the target fabrication facilities should have included a contingency cost penalty.

9. There was no mention of the regulatory and schedule barriers which could slow or block licensing a new or existing CLWR to produce tritium for defense purposes. Licensing commercial nuclear facilities falls under the jurisdiction of the Nuclear Regulatory Commission (NRC). The most recent attempts to build and license new CLWR's have resulted in extraordinary challenges by anti-nuclear groups and other intervenors. Numerous work stoppages have resulted in massive time delays and cost overruns. The last TVA CLWR to be licensed was the Watts-Barr I facility. That facility received a construction permit on January 23, 1973 and finally began operating on May 26, 1996—over 23 years later. The Bellefonte Reactor would prove especially contentious due to the obvious controversy of producing materials for nuclear weapons in a commercial nuclear facility. I am greatly concerned if the CLWR option is chosen, delays could occur which would result in tritium being unavailable when the current stored supply is exhausted and when a new source is required.

The totality of these deficiencies in the CBO's cost analysis of the tritium production options being considered by DOE makes the report's findings highly speculative and not entirely useful as a planning document. It does not appear as though CBO held any discussions with the DOE, vendor, or laboratory program leaders for the options under consideration. Further, it does not appear that CBO considered a wide variety of external reviews that have already been conducted, such as the July 1998 Congressional Research Service report which presented extensive documentation for its findings. Given the Department's recent setbacks in the Idaho Pit 9 fixed price contract, it is inconceivable that DOE or CBO would simply accept a ''fixed price'' offer at face value. A fixed price contract is only a good deal if you believe the vendor can perform the work described within the cost and schedule projections estimated.

The resumption of reliable tritium production that meets the National security requirements of the United States is one of the most difficult issues facing the Defense Authorization process this year. Unfortunately, your analysis of the costs of the various options is flawed and rather than shedding light on the true potential costs, it has caused further confusion. You are responsible for ensuring that the parameters governing CBO assessments are not skewed to assure a particular outcome and that the information used in conducting such analyses is balanced and fully transparent. I believe this report falls far short of the standard the CBO has traditionally met, and given the inaccuracies and deficiencies I have outlined in this letter, I am confident that you will move forward with all due haste to review and reconsider your incomplete findings. I look forward to receiving your revised and accurate report as soon as possible.

With kindest regards and best wishes,

Sincerely,

STROM THURMOND.

EXHIBIT 3

U.S. SENATE,
Washington, DC, August 26, 1998.

Mr. JAMES HINCHMAN,
Acting Comptroller General, General Accounting Office, Washington, DC.

DEAR MR. HINCHMAN: Tritium gas is a critical element of thermonuclear weapons and is used in every U.S. nuclear warhead. Without this element the nuclear weapons of our Nation's arsenal are useless. As the recent nuclear arms race in India and Pakistan have underscored, and as rogue nations such as North Korea, Iran and Iraq continue efforts to acquire nuclear weapons capabilities, it is absolutely essential that the United States maintain a nuclear stockpile at the highest level of readiness.

Tritium has not been produced by the United States since 1988. Since this gas decays over time, identifying a new source is clearly vital to our National Security. I have consistently maintained that it is one of our highest responsibilities to identify and develop a viable and secure tritium production source.

During the FY 1993 budget process, Congress directed DOE to examine possibilities for a new source of tritium. DOE has since adopted a dual-track strategy to investigate the Commercial Light Water Reactor (CLWR) option and the Accelerator for the Production of Tritium (APT) option.

On August 25, 1998 while visiting the Savannah River Site, Secretary of Energy Bill Richardson stated that, ''The decision (on the tritium production source) will be made on the bases of science and not politics.'' Unfortunately, it is no secret that the Administration has been leaning heavily toward the CLWR option, Recently, numerous allegations have surfaced which suggest that senior level officials at DOE have engaged in a systematic campaign to undermine the validity of the APT option. These allegations are extremely disturbing. The National Security of the United States demands that the study of the two tritium production options be approached with the utmost care and precision.

In light of the enormous implications of this decision and the allegations which imply that the final selection may be based on factors other than merit, I request you conduct an in-depth analysis of the competing tritium production options. This investigation should include, but not be limited to, the following aspects:

Is the Dual Track Strategy Balanced?—Does the evidence support the allegations that DOE principals and staff are attempting to skew the outcome of the tritium selection process to advance the CLWR option over the APT option? Has Dr. William Bishop, the Director of the APT office, or any other DOE employee been threatened, pressured, censured, reprimanded, etc. because their actions might enhance the APT option over the CLWR option? Have threats, pressures or reprimands created an environment which would limit the ability or desire of DOE employees to present balanced information about the tritium source selection process? Have key DOE employees, specifically Chief Financial Officer Michael Telson and the Director of Nonproliferation and National Security Rose E. Gottemoller, been excluded from fully participating in the ''dual track'' process?

Proliferation Concerns—President Clinton recently indicated in a July 24, 1998 press release that nuclear nonproliferation is ''one of the nation's highest priorities.'' A cornerstone of our nonproliferation policy for the past fifty years has been the strict separation of the commercial and defense nuclear programs of the United States. DOE recently stated that the nonproliferation involved in producing tritium in a CLWR are ''manageable.'' I contend that relying on commercial nuclear reactors to supply nuclear materials for our warheads will cross a boundary that all U.S. Presidents from Harry Truman to George Bush knew should never be violated. Furthermore, I suggest that given the international security environment we live in today, our Nation's nonproliferation policy should be absolutely unquestionable.

Environmental and Safety Concerns—This issue has many facets. Clearly one of the more contentious aspects of the environmental issue is the storage and disposal of the legacy materials and wastes from our defense programs and our nuclear power generation industry. Your analysis should examine the impact of the two options on this problem. I am aware that the addition of one production reactor would not greatly exacerbate the current situation. However, it is my understanding that the APT option could actually serve to reduce the storage of waste problem through the Accelerator Transmutation of Waste process. DOE, which is responsible for managing the significant nuclear waste we have produced, appears to have ignored this ground breaking technology in their considerations.

Regulatory and Schedule Concerns—Licensing a new CLWR falls under the jurisdiction of the Nuclear Regulatory Commission (NRC). The most recent attempts to build and license new CLWR's have resulted in extraordinary challenges by anti-nuclear groups and other intervenors. Numerous work stoppages have resulted in massive time delays and cost overruns. The last Tennessee Valley Authority (TVA) CLWR to be licensed was the Watts-Barr I facility. That facility received a construction permit on January 23, 1973 and finally began operating on May 26, 1996—over 23 years later. The Bellefonte Reactor would prove especially contentious due to the obvious controversy of producing materials for nuclear weapons in a commercial nuclear facility. I am greatly concerned if the CLWR option is chosen, delays could occur which would result in tritium being unavailable when the current stored supply is exhausted.

Cost—I have consistently maintained that the production of tritium is not a cost issue, it is a National Security issue. Therefore, ensuring the capacity to produce the material in a manner which is consistent with our proven nonproliferation policy is more important than cost considerations. However, in this era of constrained spending it is essential that we select a production technology which is fiscally responsible. On July 21, 1998 then Acting Secretary of Energy, the Honorable Elizabeth A. Moler, sent a letter to me in which she cited DOE's ''official'' departmental cost estimates. In my response, dated July 24, 1998, I outlined a number of serious concerns I had regarding her ''official'' estimates. I have included copies of both of these letters for your review. As I indicated at that time, I was informed by DOE Chief Financial Officer Michael Telson, that the numbers cited as ''accurate'' and ''official'' for the CLWR option were not validated by DOE, but were merely forwarded from the Tennessee Valley Authority (TVA) as the Bellefonte proposal. DOE embraced these

numbers and forwarded them to Congress as ''accurate'' and ''official'' despite the fact that TVA's record of forecasting the cost to complete nuclear plants is woeful. As part of the Congressionally mandated TVA Integrated Resource Plan, TVA reviewed the accuracy of estimates it has produced since 1987. The review found that TVA's rate of error for predicting future nuclear plant costs ranged from 100% to 230%. Furthermore, DOE allows TVA to claim that revenue from selling electricity from Bellefonte would repay the costs the American taxpayers would incur for completing the reactor. Given that the Bellefonte reactor has a current debt of $4.5 billion and that the cost of electricity is expected to decline, the Congressional Research Service, in the recent report ''the Department of Energy's Tritium Production Program'', indicated that the likelihood that a completed Bellefonte plant could sell electricity at a price high enough to recover the taxpayer's investment is ''highly uncertain.'' By contrast, when APT program officials attempted to study the possibility of generating revenue through the commercial leasing of the APT to produce medical isotopes, they were instructed to ''cease any work''. Why would DOE allow the ''official'' CLWR numbers to include highly suspect revenue potential from power generation and not consider revenue from a market which is projected to exceed $5 billion by 2010? Your providing an accurate and complete cost comparison of the two competing tritium production options will finally clarify the costs and allow the debate to be based on truly accurate information.

I firmly believe that this is one of the most important issues facing the nation. The security of the United States and the world depends on the maintenance of a credible U.S. nuclear deterrent. Due to the extraordinary consequences of the tritium production technology decision, I request you begin this investigation as soon as possible. Thank you for your attention and I look forward to hearing from you soon.

With kindest regards and best wishes,

Sincerely,

STROM THURMOND.

EXHIBIT 4

U.S. SENATE,
Washington, DC, September 4, 1998.

Mr. JAMES HINCHMAN,
Acting Comptroller General, General Accounting Office, Washington, DC.

DEAR MR. HINCHMAN: I am writing to follow up my August 26, 1998 letter to you regarding tritium production. There are additional issues that I would like your report to address concerning this important National Security program.

On August 27, 1998, the Congressional Budget Office (CBO) issued a report analyzing the two options for producing tritium, the Commercial Light Water Reactor (CLWR) and the Accelerator for the Production of Tritium (APT). After reviewing the CBO report (Attachment I), I find it to be incomplete and based on preliminary, unverifiable information. As such, I consider the conclusions of the report to be inaccurate. The fact that the Congressional Budget Office appears to have fallen far short in their analysis makes your investigation of the tritium program even more important.

There are a number of problems with the CBO report which you should be made aware of as you begin your own investigation. First, the cost figures presented for the CLWR option have not been validated by the Department of Energy's Chief Financial Officer and are based solely on preliminary contractual discussions between DOE and a potential vendor. Additionally, while the APT option has been subjected to numerous independent cost evaluations (ICE) for all design and construction costs, none of the reactor-based options have been subjected to an ICE review. The report failed to note the tentative nature of the CLWR cost figures. In the case of the irradiation services option, there is not even a valid proposal. The potential vendor for that option, the Tennessee Valley Authority (TVA), withdrew its proposal to provide such services many months ago. The report failed to note this fact as well.

Second, the report left out many critical pieces of information, including the following:

1. The report failed to make a parallel comparison of the options needed to make the required amount to tritium for our Nation's nuclear stockpile. CBO states, ''All of the options assume that DOE must make enough tritium to support a nuclear stockpile of the size allowed by the START I treaty.'' However, the analysis ignored the programmatic requirements set forth in the Department's August 1998 Draft Environmental Impact Statement (EIS) for the Production of Tritium in a Commercial Light Water Reactor. The EIS states that ''at least two reactors would be needed'' and further states that ''DOE could use as many as 3 reactors,'' to produce the tritium required to support a START I stockpile. Solely estimating the cost to complete the Bellefonte reactor as the CLWR option to produce tritium is not in line with current DOE programmatic assessments because it will not satisfy the stockpile needs at a Start I level. Your report should analyze the costs associated with producing tritium in an APT compared to producing tritium in the required number of reactors to achieve a START I level. A more accurate comparison would be to analyze the costs of producing tritium in an APT versus producing tritium at Bellefonte at a START II level, an amount that could be achieved by a single reactor during an 18-month refueling cycle.

2. Again, due to the unparalleled comparison by CBO, a more appropriate comparison of the two options would be to analyze the costs of a Stat II level. However, in the CBO report there was no mention of the significantly lower cost for the modular APT design currently being considered by DOE, which would meet START II requirements. Furthermore, the option of pursuing a modular APT was never mentioned. The cost of constructing the modular APT is equivalent to the cost of completing the Bellefonte reactor and would still allow the U.S. to move to a START I production level in the future if START II is not ratified.

3. There was no mention of the fact that the TVA option assumes full up front, block funding over a one or two year period. It would be virtually impossible for the DOE Office of Defense Programs to make two one-billion dollar payments to TVA in fiscal years 2000 and 2001; therefore, the cost assumptions are invalid.

4. There was no mention of any ancillary benefits of the APT. The APT would be highly effective in conducting research in high energy physics, medical treatments, and waste management. It could also directly support DOE research on transmutation of high level nuclear waste. Not only could these programs be a source of additional revenue for the APT, but such activities could serve the larger public good.

5. There was no mention of the independent cost evaluations that have been conducted for the APT design and construction costs.

6. There was no consideration of TVA's sizable debt service costs in the total estimated cost of the Bellefonte option. The report correctly asserts that TVA's $4.6 billion outstanding debt on the Bellefonte plant must be recovered through gross revenues at the plant. However, the debt service on $4.6 billion over 40 years averages well over $200 million per year. Taking this into account, it would appear that Bellefonte will operate at a significant loss every year it produces tritium. Current law requires that TVA recuperate such costs on a schedule and basis that advantages the ratepayers, therefore TVA would face a legal conflict. It must either fulfill its contractual obligation to pay DOE a share of gross revenues or fulfill its legal obligation to the ratepayers. In either scenario there will be significant outstanding costs that will have to be assumed by either TVA ratepayers or, in a more likely situation, the American taxpayers.

7. There were no management and support or startup costs included in the Bellefonte cost projections despite TVA's poor facility start up record. The report added $500 million to the APT cost to account for such activities. It is clear that DOE will incur added management, operations and start up costs for the CLWR. If these costs are not included for the TVA option, they should not be included for the APT project.

8. The CBO report assessed the APT option a 35% contingency cost penalty to account for DOE's poor record in completing large construction projects on time and within budget. The report accurately states that the average overrun for large DOE construction projects is 50%. However, the CBO report did not include a similar contingency penalty in the TVA Bellefonte cost estimate, despite the fact that according to the 1995 Congressionally mandated TVA Integrated Resource Plan, the average TVA cost overrun on reactor construction projects ranged from 100 percent to 230 percent. In addition, the cost estimates for the CLWR tritium extraction facility and the target fabrication facilities should have included a contingency cost penalty.

9. There was no mention of the regulatory and schedule barriers which could slow or block licensing a new or existing CLWR to produce tritium for defense purposes. Licencing commercial nuclear facilities falls under the jurisdiction of the Nuclear Regulatory Commission (NRC). The most recent attempts to build and license new CLWR's have resulted in extraordinary challenges by anti-nuclear groups and other intervenors. Numerous work stoppages have resulted in massive time delays and cost overruns. The last TVA CLWR to be licenced was the Watts-Barr I facility. That facility received a construction permit on January 23, 1973 and finally began operating on May 26, 1996—over 23 years later. The Bellefonte Reactor would prove especially contentious due to the obvious controversy of producing materials for nuclear weapons in a commercial nuclear facility. I am greatly concerned if the CLWR option is chosen, our nation runs the risk of subjecting the entire nuclear arsenal to lawsuits from third-party intervenors. This delay would result in tritium being unavailable when the current stored supply is exhausted.

The totality of these deficiencies in the CBO's cost analysis of the tritium production options being considered by DOE makes the report's findings highly speculative and not entirely useful as a planning document. It does not appear that CBO considered a wide variety of external reviews that have already been conducted, such as the July 1998 Congressional Research Service report which presented extensive documentation for its findings. Given the Department's recent setbacks in the Idaho Pit 9 fixed price contract, it is inconceivable that DOE or CBO would simply accept a ''fixed price''

offer at face value. A fixed price contract is only a good deal if you believe the vendor can perform the work described within the cost projections estimated.

Your investigation of the tritium program should incorporate an analysis of the above issues as well as those mentioned in my previous letter. While the CBO report could have shed light on the pros and cons of each option to produce tritium, it only clouded the matter further. The General Accounting Office report should ensure a balanced discussion of this issue that is so vital to the National Security of our Nation.

With kindest regards and best wishes.

Sincerely,

STROM THURMOND.

SENATOR DAN COATS

Mrs. BOXER. Mr. President, I take this opportunity, on our last day of session, to say farewell to my colleague, Senator DAN COATS of Indiana. While we have disagreed on many issues, I note that he was a supporter of one of the most important legislative accomplishments of the past few years—the Family and Medical Leave Act. He has also long been a champion of government support for adoption, and is, as am I, a strong advocate for after school, tutoring and mentoring programs. Recently, he helped move through the Congress the reauthorizing bill for ''Head Start'', one of our most effective programs for disadvantaged children.

DAN COATS is a long time member of the Big Brothers/Big Sisters of America, and was recently elected president of the organization. I know that he is looking forward to devoting more time to his Big Brother responsibilities, and I wish him all the best.

SENATOR DIRK KEMPTHORNE

Mrs. BOXER. Mr. President, as the Senate completes its work and the 105th Congress comes to a close, I want to take this opportunity to say farewell to one of my colleagues who has decided to leave this body and pursue other activities.

The junior senator from Idaho, DIRK KEMPTHORNE, and I were both elected to the Senate in 1992. We have served together for the past 6 years on the Environment and Public Works Committee. While we have disagreed on many environmental issues, I have always enjoyed working with him and appreciated his personal kindness. He is a gentleman of impeccable manners and good humor. And he is known to all his colleagues as one of the ''workhorses'' of the Senate: a senator who does his work quietly and responsibly, and does not insist on getting all the credit for the results.

My very best wishes to Senator KEMPTHORNE as he leaves Washington to return to his home in Idaho, and the best of luck in all that he does in the years to come.

PRAISE AND FAREWELL FOR SENATOR WENDELL FORD

Mrs. BOXER. Mr. President, I would like to say a few words before the close of the 105th Congress about my friend and colleague, WENDELL FORD, the very distinguished senior senator from the great state of Kentucky. His retirement from the Senate this year leaves this body of government missing a cornerstone that I am not sure we can replace anytime soon.

From the heartland of these United States, he is a strong, resonant voice for the working people of this nation. This Senate chamber will sound a bit hollow without that gruff, but friendly voice crying out for ''order'' in these chambers.

I have served for six years now with Senator FORD. During our time together I have known him as a stalwart ally in our party and a valuable friend. As an indefatigable champion for Kentucky, he never betrayed that trust that the people who elected him four times to the United States Senate bestowed upon him. That he has been able to keep his feet firmly grounded in Kentucky's interests while extending his helping hand to Senators from every region of this nation is a testament to his skill, temperament and wisdom.

I cannot speak of Senator FORD without expressing my admiration for his leadership on the Committee on Commerce, Science and Transportation, particularly his service as chairman and ranking member of the Subcommittee on Aviation. No issue is small to Senator FORD if it is a big issue to his colleague. I remember early in my tenure here that he worked with me on an issue that I have struggled with every since I came to House of Representatives and later as a Senator. We needed the Federal Aviation Administration to work with other Federal agencies and clean up an abandoned radar site on Mt. Tamalpais in my home county of Marin.

I had been here only a year or so before Senator FORD sliced through the bureaucratic tangle and resolved this local problem at long last in the 1994 FAA Reauthorization bill.

He was also there for the State of California when we were trying to get the California Cruise Ship Industry Revitalization Act accepted in conference. He stood in the door of that conference—refusing to call it complete—until our provision was accepted. This provision has provided enormous benefits for our ports in California, and we are grateful for his untiring assistance.

While helping on these local and State issues, he has been the strongest advocate for our airports, particularly in using the Airport trust fund for what it was intended modernizing and upgrading airports across the country to keep them safe and competitive. I was proud to see that we named the FAA reauthorization bill this year, the Wendell H. Ford National Air Transportation System Improvement Act. The truth is I feel like every time we have voted for the FAA reauthorization bill it has had his stamp upon it.

I wish the Senator from Kentucky a fond farewell—but not goodbye. He will always be in my thoughts and in my heart. And I know his voice will still echo throughout these hallowed halls—and in the halls of our memories, we will forever remember WENDELL FORD's decency, compassion, and plain old common sense.

JOHN GLENN—AMERICAN HERO

Mrs. BOXER. Mr. President, in 1962, a few weeks before becoming the first American to orbit the Earth, JOHN GLENN appeared on the cover of Life magazine under the header, ''Making of a Brave Man.'' JOHN GLENN is indeed a brave man, but to those of us who have served with him in the United States Senate, he is much more. He is a skilled legislator, a good friend, and an honorable and decent person.

For the generation who remembers JOHN GLENN's historic trip to space 36 years ago, his return this month abroad the space shuttle is truly special. At that time, the United States was in the midst of the cold war with the Soviet Union. The Soviets could boast many achievements in space, including the launching of the first satellite. It was a tense time, and ours hopes as a nation were with JOHN GLENN and the U.S. space program.

On February 20, 1962, America held it's collective breath as GLENN's *Friendship 7* capsule circled the earth three times. During this mission, JOHN GLENN showed us why he was our hero. When a faulty signal erroneously warned that the capsule's heat shields might come loose, he remained calm and cool, even as he watched fiery bits of spacecraft flash past him during reeintry into the Earth's atmosphere. The entire country beamed with pride at this heroic accomplishment.

President Kennedy called space ''a new ocean'', and JOHN GLENN will go down in history as one of it's first and most important explorers. His flight opened the door to future missions, such as the Mercury program, Gemini program, and eventually the Apollo program that put man on the moon.

In a few weeks, America will once again beam with pride when JOHN GLENN lifts off from Kennedy Space Center abroad the Space Shuttle *Discovery*. As opposed to his first mission, which lasted five hours, this mission is scheduled to last nine days. During that time, Senator GLENN will participate in a number of experiments designed to find parallels between the physical stress of space flight and the natural aging process.

Scientists are hopeful of finding out why astronauts and the elderly suffer from similar ailments, such as bone and muscle loss, balance disorders and sleep disturbances. Understanding these physiological characteristics