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CHEMICAL WARFARE

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HEARING

BEFORE THE

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COMMITTEE ON ARMED SERVICES

UNITED STATES SENATE

NINETY-SIXTH CONGRESS

SECOND SESSION

SEPTEMBER 4, 1980

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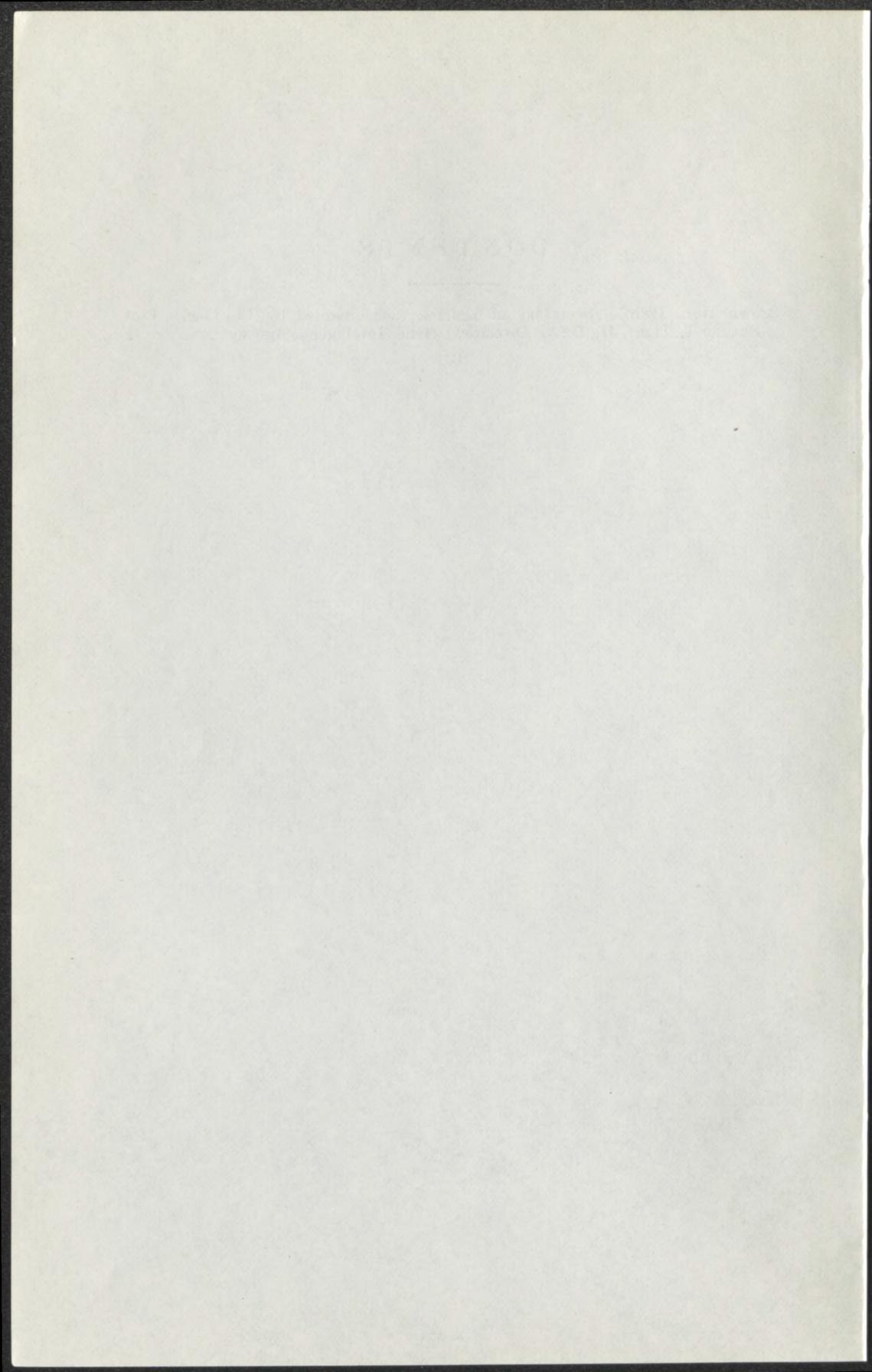
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CHEMICAL WARFARE

THURSDAY, SEPTEMBER 4, 1980

U.S. SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, D.C.

The committee met at 10 a.m., pursuant to notice, in room 212, Russell Senate Office Building, Hon. Gary Hart, presiding.

Present: Senators Hart, Jackson, Cannon, Byrd, Nunn, Exon, Levin, Tower, Humphrey, and Cohen.

Also present: Senator David Pryor.

Staff present: Francis J. Sullivan, staff director; Paul C. Besozzi, general counsel; John T. Ticer, chief clerk; Christine E. Cowart, assistant chief clerk; George H. Foster, Jr., Louise R. Hoppe, Alton G. Keel, Jr., Edward B. Kenney, Ronald F. Lehman, E. George Riedel, James C. Smith, Carl M. Smith, professional staff members; and Marie Fabrizio Dickinson, clerical assistant.

Members' assistants present: Frank Gaffney, assistant to Senator Jackson; Frank Krebs, assistant to Senator Cannon; Quentin Crommelin, assistant to Senator Byrd; Arnold Punaro, assistant to Senator Nunn; Greg Pallas, assistant to Senator Exon; Peter Lennon, assistant to Senator Levin; David Sullivan, assistant to Senator Humphrey; and Michael Hastings, assistant to Senator Cohen.

OPENING STATEMENT BY SENATOR GARY HART, PRESIDING

Senator HART. The hearing will come to order.

We appreciate very much the presence of the Secretary of Defense with us here this morning. As usual, he is under some competition for his time, primarily here on the Hill, so we will do our best to expedite these proceedings.

The purpose of this hearing this morning, as I think we are all aware, is to get the best possible information from the Secretary and accompanying witnesses on all aspects of chemical warfare.

The chairman of this committee, Senator Stennis, asked me to preside in his absence at this hearing. The hearing has been triggered by the action of the House to include funding to proceed with the construction of a facility capable of manufacturing 155-millimeter binary chemical artillery rounds. As of today, the House Armed Services Committee has reported the fiscal year 1981 military construction authorization bill which includes \$3.2 million, for such a facility. In addition, the military construction appropriations bill, passed by the full House, contains the necessary funds to proceed with that facility.

It is my understanding that the Defense Subcommittee of the House

Appropriations Committee has agreed to add \$19 million to equip this facility. None of the Senate counterpart bills, at this time, include similar authorization or appropriations for binary facilities.

In any event, the Senate must still consider this issue, whether it be on the floor as an amendment or in conference.

This hearing is to get the best possible record developed so we can act on the binary facility issue if we choose to.

I want to welcome Secretary Brown back this morning, and ask him to identify those who will be testifying with him.

We are in executive session and I would anticipate that we will be getting into classified information, and I will look to you, Mr. Secretary, to advise the committee when we get into classified matters, particularly if we get into codeword material. We have some staff that do not have all the appropriate clearances.

I understand that you do have a short statement, and you may either read it or summarize it.

I appreciate the presence of our colleagues here, and particularly I want to welcome our colleague who is not a member of this committee, Senator Pryor of Arkansas, who, of course, has an interest in this matter.

First of all, do any of my colleagues have comments or opening remarks to make?

Senator JACKSON. I have a statement I can make later, and I think we can go ahead.

Senator TOWER. I am a man of few words, Mr. Chairman.

Senator HART. We appreciate that.

STATEMENT OF THE HON. HAROLD BROWN, SECRETARY OF DEFENSE, ACCOMPANIED BY LT. GEN. EUGENE T. TIGHE, JR., U.S. AIR FORCE, DIRECTOR, DEFENSE INTELLIGENCE AGENCY

Secretary BROWN. I will try to emulate your colleagues and be a man of few words as well. I will abbreviate my statement because, as you indicated, I have been asked to appear at another hearing. To the extent that we can shorten this one, I would encourage that.

I have with me Gen. Eugene Tighe, who is Director of the Defense Intelligence Agency, and for that reason, and because he can answer many of these questions, I will try to abbreviate what I say about specific incidents of possible use of chemical and biological/chemical agents and possible or suspected biological warfare agents.

I am, of course, very happy to be here to address with you a number of questions you have raised regarding chemical warfare and related matters.

Let me submit my prepared statement for the record and just read small pieces of it.

[The prepared statement follows:]

PREPARED STATEMENT BY HON. HAROLD BROWN, SECRETARY OF DEFENSE

I am pleased to be here today to address a number of questions you have raised regarding chemical warfare and related matters. Let me begin with the specific cases in which you are interested.

Laos. Recent reports on the use of chemical agents have been supported by a medical team which we dispatched to that area last fall. The team's full report

can be made available to you, but, in brief, their conclusions are: chemical agents have been used, and their reported effects suggest a nerve agent, a non-lethal riot control agent, and an unidentified combination or compound.

Afghanistan. Here, our intelligence assessment is less certain. Soviet forces have used non-lethal chemical agents (not prohibited by the 1925 Geneva protocol) against insurgents. But, continuing allegations—mostly from insurgent leaders and Afghan refugees in Pakistan—of deaths resulting from Soviet chemical attacks leave me uncertain about whether either lethal agents such as nerve gas, or lung irritants such as phosgene which can be lethal, have also been used.

In view of these serious charges, the Department of State, in an action I strongly support, has increased its efforts through the United Nations for an international investigation of alleged uses of chemical weapons.

Sverdlovsk. A very disturbing incident occurred last year, in this city located in the central USSR, concerning Soviet compliance with the Biological Weapons Convention (BWC). A number of sources reported that in April 1979, an explosion in a military compound—the site of a suspected biological warfare research and production facility—released a cloud of anthrax spores into the atmosphere, that the wind then carried this cloud from the compound to the outskirts of the town, that as many as 1,000 residents may have perished and that the symptoms displayed by the victims are consistent with inhalation of anthrax.

There are three primary methods of exposure to anthrax organisms: skin contact, ingestion of contaminated food, and inhalation. The first two are treatable, but the last form, inhalation, has a high fatality rate—exceeding 90 percent—and, even with early diagnosis and treatment, most often results in death.

The Soviet explanation of this incident was, and continues to be, that there was an outbreak of anthrax in Sverdlovsk, but that the outbreak originated from ingestion of contaminated meat from livestock illegally slaughtered in a town nearby. We do not have enough evidence for an unambiguous conclusion, but such an explanation is not supported by the facts available to us.

DOD is supporting the Administration in attempting to initiate technical consultations with the Soviets, on a bilateral basis—under the terms of the BWC—to gain a better understanding of this very serious incident. The Administration is determined to pursue this problem to a satisfactory resolution.

U.S. Policy. Turning now to the policy issues associated with this hearing, let me briefly state our national policy. We are signatories to the Geneva Protocol of 1925, and thus, are committed to no first-use of the chemical agents—lethal or incapacitating—covered. We are also signatories to the Biological Weapons Convention (1975), which commits us to the elimination of chemical weapons through negotiations. In the absence of a treaty banning chemical weapons with adequate verification, we maintain a retaliatory stockpile to deter the use of chemicals by others and to retaliate if deterrence fails.

The Soviet Union, as I noted in my Annual Defense Report for FY 1981, is better prepared than any other nation to conduct chemical warfare. We have good evidence of their very large effort on chemical warfare defense. We are less sure of the size of their offensive stockpiles and production rates, but believe that their offensive capabilities are formidable. With this recognition, and with the full support of the Congress, we have embarked on a program to provide significant improvements in our *defensive* posture. This is being accomplished by combined research, development and procurement programs.

Research and development has been directed toward new and improved equipment in medical therapy and casualty care, remote detection of chemical attack, personnel protection equipment, decontaminating solutions and dispensing equipment, and materials and devices to provide realistic simulations for training. Our procurement program is furnishing survival equipment such as overgarments which absorb chemical agents, face masks/boots/gloves, alarms to alert units to the presence of chemical agents, decontamination equipment to permit continued operations, field shelters, and individual filter units for armored vehicles.

In addition to these actions, the Army Chemical Defense School has just been reestablished at Fort McClellan, Alabama for increased training of combat personnel.

In the FY 1981 budget, for our defensive chemical warfare programs, the R & D request is for \$85 million, the procurement program is \$78 million, and the operations and maintenance program totals \$66 million. The Services will be moving from what are now considered marginal protective postures to adequate or satisfactory postures by the [deleted].

However, improved protective measures, by themselves, are in my judgment of questionable adequacy as a deterrent against the use of chemical weapons, [deleted].

I believe we need an effective retaliatory capability, combined with a viable defense.

It has been suggested that the possibility of nuclear retaliation to the use of chemical warfare will provide an adequate deterrent. I do not consider such a posture credible. [Deleted.] The U.S. should also have a credible chemical response option to Soviet use of chemical weapons [deleted].

For this reason, we need a program that provides measurable and visible evidence of our resolve to field a chemical warfare retaliatory capability.

We have a fairly significant effort devoted to defensive programs, but our efforts in upgrading our chemical warfare retaliatory capability are quite limited. Our present stockpile is losing some of its capability because of deterioration and the lack of compatible delivery systems. We have not manufactured any chemical agents or munitions since 1969. An additional concern, of which I am sure you are all aware, is providing for safe storage, transport, and disposal of our stockpiled munitions.

Our current research and development efforts—\$3.2 million in FY 1981—are being concentrated on Binary Weapons. A binary weapon is one in which two non-lethal components are packaged separately, and combined to form the standard nerve agents only after launch, that is, while en route to the target.

Binary weapons are as effective as the present bulk filled munitions, but they have significant safety advantages in manufacturing, storage, transportation, and eventual disposal. Binary munitions would thus eliminate many of the peacetime environmental and public health concerns regarding chemical weapons, since what is to be stored would not be lethal and the large disposal costs [deleted] are eliminated.

A brief review of the funding requests for a binary production facility shows that initially—in FY 1975—\$5.8 million was requested to renovate an existing structure. This was defeated on the floor of the House by a voice vote after extensive debate. In FY 1976, a request was submitted for \$9.4 million for such a facility. Again, after considerable debate, it was turned down, but \$8.8 million was added to the defensive equipment procurement budget—along with the provision that we should allow one year for further arms control negotiations. Thus, no submission was made in FY 1977. From then until now—while inter-agency reviews considered military requirements, foreign policy, and arms control considerations—no further requests have been submitted.

The facility now under consideration would be of modular construction—designed for separate binary ingredient production and separate modules for the loading, assembling and packaging of both artillery projectiles and the larger items such as bombs or missile warheads. The initial module is planned to include basic utilities (power, water, waste) and the security and safety equipment (fencing, lighting, intrusion alarms) for follow-on construction. The modular design allows phased decision points, so that substantial recovery of equipment costs would be realized in the event, or when, no further modules were necessary. Currently, plans exist for modules for three chemical weapons (155mm GB projectile, the BIGEYE bomb and the 8-inch VX projectile). Consideration of the multiple rocket launcher warhead has been deferred to a later date. [Deleted.]

* * * * *

The United States has engaged in bilateral negotiations with the Soviet Union since 1977 in an attempt to obtain a comprehensive, effective, verifiable agreement on chemical weapons. These negotiations continue, and although some progress has been made, major differences exist in [deleted] verification measures, [deleted]. Only a major shift by the participants would allow an agreement to be concluded, with subsequent presentation to the Committee on Disarmament (CD) for multi-lateral agreement. Within the CD, a working group on chemical warfare—with a limited charter—has been formed. We have hope that an agreement will materialize from these negotiations. Should we be successful in this endeavor, a credible deterrent will still be required for a period of at least ten years after its ratification—the mutually-agreed time required to destroy stockpiles and production facilities.

* * * * *

[Deleted.]

The impact on arms control negotiations is also being assessed. A modernization decision by the U.S. could be perceived as a change in our commitment to arms control. It could spur further Soviet efforts. Alternatively, a modernization decision might cause the Soviets to be more reasonable in CW arms control negotiations.

[Deleted.]

In the meantime, the events in Laos—and possibly also in Afghanistan—remind us that the deterrence of chemical warfare is a real issue. In the absence of an agreement to ban chemical weapons, I believe that a credible retaliatory capability, combined with the on-going upgrade of our defensive posture, is necessary to provide an adequate deterrent to the use of chemicals by other nations. [Deleted.]

The cost of modernizing our chemical warfare stockpile would be substantial. [Deleted.] We will need to be sure of these figures, and to know the tradeoffs with other weapons systems before making a modernization decision.

Within DOD, I requested the Defense Science Board to study this problem in its entirety during this year's summer study. Their report will be completed and available in the near future. At the interagency level, we are continuing to study the many and complex ramifications involved with this issue. Our position will be decided this fall during the FY 1982 budget process. We are not seeking funds for a binary facility in the FY 1982 budget. We will keep the Congress fully informed of our progress in this important and sensitive area. Thank you.

Secretary BROWN. Let me begin by talking about U.S. policy, with respect to chemical warfare agents.

We are signatories to the Geneva Protocol of 1925, thus we are committed to no first-use of the chemical agents—lethal or incapacitating—that are covered by that protocol.

We are also signatories to the Biological Weapons Convention of 1975, which commits us to the elimination of chemical weapons through negotiations. In the absence of a treaty banning chemical weapons, along with adequate verification, we maintain a retaliatory stockpile to deter the use of chemicals by others and to retaliate if deterrence fails.

The Soviet Union, as I noted in my annual defense report for fiscal year 1981, is better prepared than any other nation to conduct chemical warfare. We have good evidence of their having large efforts on chemical warfare defense. We are less sure of the size of their offensive stockpiles and production rates, but we believe that their offensive capabilities are formidable.

With this recognition, and with the full support of the Congress, we have embarked in the past, and continue a program to provide significant improvements in our defensive posture. That includes combined research, development and procurement programs, which are given in a little more detail in my statement.

The services will be moving, in effect, from what are now considered marginal protective postures to adequate or satisfactory postures by [deleted] however, improved protective measures, by themselves, are, in my judgment, of questionable adequacy as a deterrent against the use of chemical weapons, [deleted]. I think we need an effective retaliatory capability, combined with a viable defense.

It has been suggested that the possibility of nuclear retaliation for the use of chemical warfare will provide an adequate deterrent. I do not consider such a posture credible. The United States should also have a credible chemical response option to the Soviet use of chemical weapons, [deleted].

For this reason we need a program to provide measurable and visible evidence of our resolve to field a chemical warfare retaliatory capability.

We have had a fairly significant effort devoted to defensive programs, as I indicate. Our efforts in upgrading our chemical warfare retaliatory capability have been quite limited. Our present stockpile is losing some of its capability because of deterioration and the lack of compatible delivery systems.

We haven't manufactured any chemical agents or munitions since 1969.

An additional concern, of which I am sure you are all aware, is providing for safe storage, transport and disposal of our stockpile of chemical munitions.

Our current R. & D. efforts, \$3.2 million in fiscal year 1981, are confined to binary weapons, and I think you all know what those are. They would have significant safety advantages in manufacturing, storage and transportation and eventual disposal. They thus eliminate many of the peacetime environmental and public health concerns regarding chemical weapons, since what is stored will not be lethal; the large disposal costs would be eliminated.

We have [deleted] anticipated disposal costs for the present bulk-filled munitions and, of course, that is not relieved by going to binaries. We would have to do that at some time anyway.

If we look at the funding requests in the past for binary production facilities, we find that initially in fiscal year 1975, \$5.8 million was asked of the Congress to renovate an existing structure. That was defeated on the floor of the House by a voice vote after extensive debate.

Another try was made in fiscal 1976 and in that case, provision was added by the Congress that we should allow 1 year for further arms control negotiations. Thus, no submission was made in fiscal 1977, and in fact from then until now, while interagency reviews considered military requirements, foreign policy and arms control considerations, no further requests have been submitted.

The facility now under consideration would be of modular construction, designed for separate binary ingredient production and separate modules for the loading, assembling and packaging of both artillery projectiles and larger items such as bombs or missile warheads.

The modular design would allow phased decision points, so that we would realize substantial recovery of equipment costs if or when no further modules were necessary. Those plans exist for modules for three chemical weapons, and they are mentioned here.

[Deleted.]

Let me now turn to some of the foreign policy considerations.

The United States has engaged in bilateral negotiations with the Soviets since 1977 in an effort to obtain a comprehensive verifiable agreement on chemical weapons. These negotiations continue, although some progress has been made, major differences exist on various issues. We have hope that an agreement will materialize from these negotiations.

Should we be successful, a credible deterrent will still be required for a period of at least 10 years after its ratification. That is the mutually agreed time required to destroy stockpiles and production facilities.

[Deleted.]

We are also going to have to assess the impact on arms control negotiations. A modernization decision by the United States could, if we don't prepare the ground correctly, be perceived as a change in our commitment to arms control. It could spur further Soviet efforts. Alternatively, a modernization decision might cause the Soviets to be more reasonable with arms control negotiations.

[Deleted.]

But in the meantime, the events in Laos and possibly in Afghanistan remind us that the deterrence of chemical warfare is a real issue. In the absence of an agreement to ban chemical weapons, I believe that a credible retaliatory capability, combined with the ongoing upgrade of our defensive posture, will be necessary to provide an adequate deterrent to the use of chemicals by other nations.

[Deleted.]

The cost of modernizing our CW stockpile would be substantial [deleted]. We will need to be sure of these figures and know the trade-off with other weapon systems before making a modernization decision.

Within DOD, I have asked the Defense Science Board to study this problem in its entirety during this year's summer study. Their report is going to be completed and available in the near future.

At the interagency level we are continuing a study of the many and complex ramifications involved in this issue. Our position will be decided this fall during the fiscal 1982 budget process. We are not seeking funds for a binary facility in the fiscal 1981 budget.

We will keep the Congress fully informed of our progress in this important and sensitive area.

Thank you, Mr. Chairman.

Senator HART. Thank you, Mr. Secretary.

To move as quickly as we can, we will adhere to the 10-minute rule.

What would be, in your judgment, the effect of a decision by the Congress to proceed with initial authorization of a binary production facility in Arkansas or anywhere else on the sensitive negotiations that you were talking about?

Secretary BROWN. I think it would probably raise some of those sensitivities. It is not quite the same thing as an administration policy decision. An authorization is not an appropriation, but these nuances are often lost on other countries. I think they would see it as a major step forward in U.S. chemical warfare offensive capabilities with all of the positive and negative effects that that might have, which I have described in my statement.

[Deleted.]

Senator HART. How would you characterize that concern?

Secretary BROWN. It is a significant concern on my part. It is part of the reason why I think that the administration's position of not seeking this money now is correct.

Senator HART. We will ask some specific questions for the record, but how would you characterize, in your own judgment, the state of Soviet capability in Europe in the chemical warfare area right now?

Secretary BROWN. I think it very clearly far outweighs ours.

[Deleted.]

Senator HART. What about its age?

Secretary BROWN. [Deleted.] I think we have reason to believe it is considerably younger than ours, because on ours we have nothing newer than 1969.

Senator HART. [Deleted.]

Secretary BROWN. [Deleted.]

[Deleted.]

Senator HART. You mentioned the figure [deleted] does that include?

Secretary BROWN. That includes—well [deleted] if I remember correctly, is what it will cost for modernization.

Senator HART. What does that include?

Secretary BROWN. That includes not only the construction of the facility under consideration but also several years' production at about [deleted.]

Senator HART. You are talking volume now, and not specific weapon systems?

Secretary BROWN. That is right.

Senator HART. Does that include any defensive capability?

Secretary BROWN. No. I am talking just about the offensive capability. On the defensive capability, it seems to me we should go ahead in any event, and we are.

Senator HART. [Deleted.]

Secretary BROWN. [Deleted.]

Senator HART. What portion of our deterrent capability does the present Weteye weapon represent? I think you used the words—

Secretary BROWN. I included them.

Senator HART. Are they an important part?

Secretary BROWN. I think they are an important part. Part of the discussion of this issue goes to artillery shells versus bombs, and depending upon which service you talk to, you get various answers.

They are both clearly important, but we have the most flexibility with the bombs, [deleted].

Senator TOWER. I have no questions.

Senator JACKSON. Mr. Secretary, I am a little confused. I had understood that in preparation of the fiscal year 1981 budget your office had requested from OMB the funds—the same \$3.2 million that we have here—for a binary facility at Pine Bluff.

Secretary BROWN. I haven't requested those funds.

Senator JACKSON. You didn't request it?

Secretary BROWN. I have never requested those funds from Congress. The decision was made during the budget discussions last September, October, and November, the considerations that I described the diplomatic considerations and foreign policy considerations, were advanced very forcefully, and I subscribed to them; therefore, I did not press for inclusion.

Senator JACKSON. Well, if you didn't press, what was your recommendation?

Secretary BROWN. I did not, or I never did formally; I always put into the budget, as you know, Senator Jackson, an enormous list of things. Then the President and I decide where to draw the line, and we decided to draw the line with this out.

Senator JACKSON. What was your personal—I will ask you—as distinguished from the administration's—position, what was your personal recommendation?

Secretary BROWN. I don't make a distinction, but if you want to know my personal opinion, my personal opinion is that at some time we should move forward to modernize the stockpile; but I think the time is wrong now.

Senator JACKSON. When will the time be right?

Secretary BROWN. [Deleted.]

[Deleted.] When we make up this fall's budget.

Senator JACKSON. Mr. Secretary, you are an old hand at negotiating arms control proposals. Is there any record in our history, in the postwar period at least, of the Soviets ever agreeing to an arms control agreement in a given field where one or the other side had no meaningful, credible capability? Do you recall the Baruch-Acheson proposal, when they refused to deal with the offer that we had made to the U.N.? They had no nuclear weapons capability and they refused to negotiate. Let me say, I want an arms control agreement on chemical warfare—but do you really believe that the Russians will sit down and agree to a ban on chemical agents in the light of our current, rather obsolete posture in this area, considering that they apparently have a substantial capability already in being?

Secretary BROWN. I think that the two sides have to be commensurate; they don't have to be equal or even exactly comparable but they have to be commensurate in their capabilities, present and potential.

To some degree, U.S. potential capability can offset Soviet action or Soviet present capability in arms control negotiations. That is not in a war but in arms control negotiations. It is a matter of judgment as to whether an initiation at this time of a binary production line would make a positive or negative difference.

As I indicated in my testimony, clearly having more in being would influence the Soviets or could influence the Soviets to be more forthcoming.

On the other hand, if they could make a big propaganda gain by saying that the United States is heating up the arms race and get the other countries to agree with them, or if we fall into that trap by the timing of our action, they may opt for that instead.

Senator JACKSON. Alternatively, if, as we take a step toward binary production—knowing full well that we are not going to be able even if we start now to have production going until 3 or 4 years—

Secretary BROWN. I think 4 years is more like it.

Senator JACKSON. If as we do that we make clear our willingness to enter into a rascalproof, verifiable agreement, we could make real progress toward a sound arms control accord. I want a good agreement.

We went through that in the ABM business, in which when we started considering serious control deployment of ABM's they agreed to a limitation on the size and number of systems.

My message to you is that if we want to get a real agreement here, we have to get a chemical weapons program that is credible. We don't have a credible chemical warfare deterrent now.

I must say that what has happened on the Sverdlovsk matter is very disturbing to me as I am sure it is to you. It raises larger questions of verification and verifiability, but there seems to be substantial reason to believe that they may be in violation of the 1975 Biological Weapons Convention.

I realize that the evidence is something we can only discuss in a more highly classified session but on that point I want to ask about the so-called biological warfare alarm. That is advanced development but I don't believe there is any funding in the budget for it. What is your view of that system?

Secretary BROWN. I am not familiar enough with the details to make a comment. I would be glad to supply an answer for the record.

Senator JACKSON. Would you supply that for the record?

Secretary BROWN. Yes.

[Not supplied as of presstime.]

Senator JACKSON. It seems to me that that is something that is desperately needed.

If we want to get on with the task of bringing about an arms control agreement to eliminate chemical agents, Mr. Chairman we ought to move on construction of a binaries facility.

Senator JACKSON. The utter lack of progress in the chemical negotiations to date tells us we have to try a different tack. The old approach, as typified by Secretary Vance's letter to you of October 23, 1977, just hasn't worked. In it he said—this is in opposition to going forward with binary facility construction, and I quote—"I am concerned that [deleted].

Now, that is 3 years ago. What is your response to that? Do you agree with that?

Secretary BROWN. That diplomacy moves slowly.

Senator JACKSON. In the meantime, the Soviet capability in this area is moving rapidly; isn't that about it?

Secretary BROWN. I don't think that the disparity between us and them has changed a lot in the past 3 years. It has been substantial before and still is. I think the Laos and the Afghanistan reports are the big change, I would say, in the last couple of years that would cause me to have additional concern, but they concern me on both sides of the issue. They increased my concerns about U.S. needs to have a credible retaliatory capability.

I think we have some capability now, and you can argue about how credible it is. They also, to me, increase the urgency of trying to get a treaty banning this stuff.

Senator JACKSON. In my judgment, the simple fact of the matter is that the Russians are not going to enter into an agreement knowing our lack of capability to place in the field a credible chemical warfare force. It seems to me that the way you really get negotiations moving is taking the action which I am confident the Congress will do. The House committees have already done so on both authorization and appropriations bills.

Senator HUMPHREY. Thank you, Mr. Chairman.

I just read through your statement and on page 9, the third paragraph, you state your concerns about the impact on arms control negotiations of any U.S. moves to modernize the chemical warfare capabilities. My concerns are those voiced by Senator Jackson.

It seems to me that this administration has for too long now been more concerned about Soviet perceptions than about world realities. We are badly outclassed in chemical warfare capability. I think that cannot be challenged, and yet, after 3 years, after Secretary Vance's letter, we are still in the same position. We are hoping against

hope that somehow the Russians are going to become moderate and reasonable and will enter into realistic and verifiable agreements, yet the evidence is overwhelming we are in trouble. The Soviets have shown no compunction about releasing chemical agents to their allies, and at least in Laos, if not in Afghanistan. If we are truly concerned with prevention of chemical warfare use through retaliatory capability, shouldn't we get on with it?

Secretary BROWN. I recognize that view in the last sentence of the paragraph to which you refer, that arms control negotiations could be spurred by a modernization decision as well. It is a matter of judgment. I don't hope against hope for Soviet acquiescence in reasonably equal and verifiable arms control agreements. I press them for that, and when I have them, and when we get them, we hope that the Senate acts favorably on them.

But there is a broader issue beyond even the arms control, negotiations and that is, relations with our allies, which I have also discussed. It seems to me that is largely a matter of timing and education. I think the ground now is uncertain. I think it is realistic that a precipitate decision on our part, or what they would see as a precipitate decision, even though, as you correctly point out, we have been hashing this out for several years would have very negative consequences.

Senator HUMPHREY. With regard to chemical warfare negotiations arms control negotiations, are we prepared to accept less than onsite inspection with regard to verification?

Secretary BROWN. I would defer discussions of the details of the negotiations to the State Department. My own view is that you have to have adequate verification, and I have not, myself, seen adequate verification that does not include some onsite inspection.

Senator HUMPHREY. Are you willing to give an opinion on the adequacy of something less than onsite verification?

Secretary BROWN. I am confident that our proposals and the proposals we have advanced so far include adequate verification.

Senator HUMPHREY. What is the Soviet position on onsite verification?

Senator BROWN. Again, I am not prepared to get into details of the negotiations and I am not sufficiently well informed about them.

Senator HUMPHREY. Why has it proved to be so difficult to verify the use of chemical war agents in Afghanistan? Have we made a concerted effort to do it? I know we are trying to do it through the United Nations, which, to me, does not seem the most effective way of operating, but surely we have the capability. It seems to me, an important point to establish, whether or not the Soviets have used chemical warfare in Afghanistan, we have the capacity to find that out.

Secretary BROWN. That is something that I think should be gone into by General Tighe in a more restricted session; but I would point out one thing, and that is, if you are not there, it is not easy to tell. So long as you are relying on second- and third-hand reports, it is difficult. That makes your point about onsite inspection by analogy at least fairly well.

Senator HUMPHREY. Thank you.

Have we established that the Soviets have supplied nerve gas to the forces of Laos and Cambodia?

Secretary BROWN. I don't think that we can trace the supply very well. Again, I think I will leave that for General Tighe and a more restricted session.

Senator HUMPHREY. Are you saying we don't know whether or not the Soviets supplied nerve gas?

Secretary BROWN. At least I am not sure. I think there is evidence, as I say in my statement, that chemical agents have been used, and reports suggest a nerve agent, a nonlethal riot control agent, an unidentified combination or compound. That makes it a little hard to tell, at least in the latter case, where they got it.

I am not trying to absolve the Soviets. I think such a conclusion may be the correct one. I merely think that we ought to be very careful in our statements not to overstate something that we can't prove precisely.

Senator HUMPHREY. Does it worry you that there is a great likelihood that the Soviets have supplied chemical warfare weapons to Laos and Cambodia and therefore there is less reason to believe that they wouldn't use it themselves if they decided to move?

Secretary BROWN. That is precisely the concern I was expressing, I think, in an answer to one of Senator Jackson's questions, when I said the biggest thing that has happened since 1977, in my judgment, is not that the Soviets have greatly increased their capabilities, but that there is more sign of a willingness to use them.

Senator HUMPHREY. Regarding the Sverdlovsk incident, you state on page 2, the last paragraph, that the Soviet explanation is not supported by the facts available to us. So you conclude that they are lying about the incident at Sverdlovsk; is that correct?

Secretary BROWN. I have stated it in a more careful way, because in the absence of complete information you can only say whether what you know is consistent. Maybe there is some explanation that they could provide us with that would convince us that they are telling the truth. They haven't done so.

Senator HUMPHREY. But your conclusion is that their explanation is not supported by the facts?

Secretary BROWN. It is not supported by the facts available to us. Again, in a more restricted session, I think General Tighe would be prepared to go into the nature of that evidence.

Again, a good deal of it is human and people can argue about their reliability. I happen to think it is rather reliable.

Senator HUMPHREY. Mr. Secretary, you have probably seen this recently published book, "A Program for Military Independence." The statements here are that with respect to chemical warfare that Russia outnumbers the United States in chemical units by a factor of 35 to 1. Is that approximately a correct statement?

Secretary BROWN. I think they have something like 100,000 and we have something like 4,000 troops specifically dedicated to chemical defense, and so that is about the right factor.

As I say, that is a statement of comparability of defensive capability; it is a lot harder to find out what the offensive capability is.

Senator HUMPHREY. It further states that Russia outnumbers the United States in chemical decontamination equipment by a factor of 10 to 1.

Secretary BROWN. This is part of the same thing. They have much more chemical warfare defensive capability than we.

Senator HUMPHREY. And the Russians outnumber the United States in chemical munitions by a factor of 8 to 1.

Secretary BROWN. [Deleted.] The estimates vary, if I remember correctly, by a factor of about 20.

Senator HUMPHREY. So you have no Defense Intelligence Agency reports that specify numbers with regard to that?

Secretary BROWN. I think we probably do, but my recollection is that the estimates of Soviet capability, and Soviet chemical warfare stockpiles, run from 30,000 to several hundred thousand.

General TIGHE. [Deleted.]

Secretary BROWN. I am not trying to imply that the Soviets don't have any chemical warfare munitions; I am convinced they do, and I think they are probably substantially bigger than our stockpiles. I am trying to introduce a proper note of caution into numerical estimates.

Senator HUMPHREY. If there isn't time for a second round later, I would like to submit questions in writing.

Senator HART. Written questions are acceptable.

Let me remind the committee of two facts: One is that the Secretary is under pressure to be over on the House side, and any forbearance on limiting questions would be helpful; and second is that to answer specific questions, we may have to go to a more restrictive security classification and excuse some of the people here in the room.

I think that Senator Byrd was here first.

Senator BYRD. Mr. Secretary, this whole question of chemical warfare is important to the Senator from Virginia, and I am sure it is to you as Secretary of Defense. In your statement, on page 3, you say that the Soviet or the Russian capabilities are formidable. What offensive capability does the United States have in chemical warfare?

Secretary BROWN. Well, we have a stockpile [deleted] mixed between bombs and shells and some which has not been used to fill munitions. That has become less useful as the delivery systems have become more poorly matched. For instance, we are phasing out 105-millimeter howitzers and putting in 155-millimeter howitzers, but that capability for 105 howitzers still exists. It is a limited deterrent capability.

Senator BYRD. So, it would be accurate to say that the United States has a very limited offensive capability?

Secretary BROWN. I said, "limited" and I didn't say "very limited." It is limited but if used it could cause tremendous damage.

Senator BYRD. Have we done, or do we plan to do, anything in regard to an offensive policy?

Secretary BROWN. Well, what I said, Senator Byrd is, that our policy is to continue to have a retaliatory capability as part of the deterrent. We are continuing to consider how best in the future to plan that retaliatory capability, including the possibility of replacing the present stockpile with binary munitions.

Senator BYRD. [Deleted.]

Secretary BROWN. [Deleted.]

Senator BYRD. [Deleted.]

Secretary BROWN. [Deleted.]

Senator BYRD. [Deleted.]

Secretary BROWN. [Deleted.]

Senator BYRD. You mentioned a United Nations resolution. How effective is a United Nations resolution, in your judgment?

Secretary BROWN. A United Nations resolution calling for such a fact-finding mission, I think, would stand a good chance of producing one.

Senator BYRD. As I understand it, you are not seeking funds for a facility in the current budget and you are considering as to whether to seek funds in the 1982 budget?

Secretary BROWN. That is correct.

Senator BYRD. That would be, I assume, for a defensive situation?

Secretary BROWN. No, it is for a binary production facility for, retaliatory weapons. In fact, it is precisely the same thing as the committee is now considering, because it is precisely that, that the House actions have included.

Senator BYRD. In your statement you say that a modernization decision by the United States could be perceived as a change in our commitment to arms control and it could spur further Soviet efforts.

Then you say, alternatively, a modernization decision might cause the Soviets to be more reasonable in chemical warfare/arms control negotiations. What is your own view?

Secretary BROWN. In my view, it depends on the timing. I think if such a decision comes in conjunction with the fiscal year 1981 budget it is likely to have negative effects.

Senator BYRD. How serious, in your judgment, is the chemical warfare problem?

Secretary BROWN. I think it is a serious problem.

Senator BYRD. Thank you, Mr. Chairman.

Senator JACKSON. Senator Cohen is next.

Senator COHEN. General Meyer testified before the Senate Armed Services Committee on February 26 of this year that [deleted]. Do you agree with that?

Secretary BROWN. No; I don't agree with it. I said I would regard it as marginal, but not "not credible."

Senator COHEN. What is that?

Secretary BROWN. I would not call it "not credible."

Senator COHEN. You think we have a "marginal credible" deterrent?

Secretary BROWN. Marginal but credible.

Senator COHEN. Mr. Secretary, you testified on June 5 of this year that the United States, and again I am quoting, [deleted].

Secretary BROWN. Yes; but that is a numerical judgment on the part of the Chiefs. [Deleted.]

Senator COHEN. What is the estimated stockpile of the Soviets?

Secretary BROWN. We just have been through that several times. There is no decent estimate.

Senator COHEN. [Deleted.] Where do we get those estimates?

Secretary BROWN. As General Tighe said, we get them not out of thin air but out of a great deal of sequential inferences.

Senator COHEN. You don't put any stock in the fact that our estimates are prepared by DIA [deleted].

Secretary BROWN. I don't put any more stock in them than they do and I don't think you should either.

Senator COHEN. They don't put any stock in them either?

Secretary BROWN. They put as much stock in them as General Tighe said. I think that [deleted] is not an unreasonable estimate, but it is very, very uncertain. It could be much more and it could also be quite a bit less.

Senator COHEN. What is the U.S. stockpile?

Secretary BROWN. As I indicated before [deleted].

Senator COHEN. [Deleted.]

Secretary BROWN. That is what is in Europe.

Senator COHEN. That is what I am talking about.

Secretary BROWN. Well, if you only count what is in Europe—

Senator COHEN. I am measuring our capability against the Soviet stockpile.

Secretary BROWN. We have a stockpile, too, [deleted].

Senator COHEN. [Deleted.] Do you disagree with that?

Secretary BROWN. I don't think that that is a very useful figure. I think there have been some paper calculations but I don't regard those as reliable.

Senator COHEN. What do we base our wartime strategy on?

Secretary BROWN. I don't understand the question.

Senator COHEN. Well, the JCS indicates that they think [deleted] would be required to halt a Soviet advance in Europe and you say you don't agree with that particular figure, so I am asking you, what do you agree on?

Secretary BROWN. I don't think that whether a Soviet advance in Europe can be halted or not depends upon the size of our chemical warfare stockpile. [Deleted].

Senator COHEN. Well you have always indicated before that you don't think that nuclear weapons should be used as a substitute for chemical warfare.

Secretary BROWN. That is right.

Senator COHEN. To the extent there is a radical imbalance between Soviet and United States chemical capability, would that lower the threshold for the first use of nuclear weapons?

Secretary BROWN. Not everybody would agree with me, but I would say yes, it does lower it.

Senator COHEN. Now with respect to our allies, I have had a chance to meet with some of them recently, [deleted]. I couldn't help but agree with Senator Jackson, that the only time the Soviets have expressed any interest in arms agreements is when the allies made the courageous step of going forward in the face of threats from Mr. Brezhnev and others. Also you may know that the allies were concerned, especially West Germany, about the President's decision to cancel the neutron weapon. One of the questions I raised recently when I was in Europe was: Now that France has decided to do what the United States decided not to do, would that make it easier for Germany to accept neutron weapons in view of the fallout that came about as a result of the U.S. decision?

Secretary BROWN. [Deleted.] They are more alarmed by a lack of decision on our part rather than being concerned about whether we should decide in this Congress to go forward and say "Unless you are prepared to seriously negotiate on chemical warfare, then the

United States would have no alternative but to prepare a credible deterrent," because I think your statement indicates quite correctly that we would retaliate if deterrence failed.

Senator COHEN. If we look at those relative stockpiles and capabilities, I think that our deterrent capability is rapidly failing.

Secretary BROWN. Without at all questioning what you were told, Senator Cohen, I would only add or I would only say that what we need from our European allies is an official position on these things, and that we often get conflicting statements from various people when we talk to them.

Senator COHEN. Is it true that the Army has requested for the last 4 years moneys to go forward with production?

Secretary BROWN. The Army has been requesting that since 1975, at which point the Congress first turned it down.

Senator COHEN. Congress turned it down but Congress is more sympathetic to their request now. But OMB was not the last time, and you are not this time.

Secretary BROWN. It is a matter of timing.

Senator COHEN. That is all I have.

Senator HART. Senator Cannon.

Senator CANNON. I will defer to my colleague.

Senator NUNN. Senator Jackson read you this letter of October 23, 1977, from the Secretary of State in which he says [deleted] other evidence that this prediction of Vance's that this would force them into a position of having to respond to U.S. initiative by taking a positive step toward reducing their own chemical warfare program, has there been any step in that direction according to any information that you have?

Secretary BROWN. Well, it may have forced them in that position but I have no evidence that they have taken the step.

Senator NUNN. They haven't recognized that they were forced in that position?

Secretary BROWN. I can't speak to their psychology.

Senator NUNN. Well, only our State Department recognizes that awkward position we have forced the Soviets into.

Secretary BROWN. The Soviets are in an awkward position now but more because of these reported uses than because of stockpiles.

Senator NUNN. So did you agree with these two sentences, and is this just the State Department view?

Secretary BROWN. I simply don't remember whether that letter was cleared with me before it was sent, so I don't propose to raise another issue of this kind this morning.

Senator NUNN. Do you agree with it now?

Secretary BROWN. I don't think it had the hoped for—I don't think our decision not to go ahead had the hoped-for effect.

Senator NUNN. Is this still the administration position? Does this letter reflect the administration's current position?

Senator HART. Before you answer, would the Senator yield? I think in fairness to the witnesses, are you familiar with the letter or do you need to see it?

Secretary BROWN. I don't think it is fair to ask witnesses questions about 3-year-old letters. I would want to go back and look and see

what is says, and what was said at the time. I simply don't know whether it still represents our position.

Senator NUNN. I will use the rest of my time, and let him read the letter and ask him, if it is administration position, the purpose of these hearings is pretty clearly moot.

[The letter was given to the Secretary.]

Secretary BROWN. Well, it remains the administration position that our chemical warfare forces be maintained without improvement, but that is something that we are reconsidering in conjunction with this fall budget. So that is still the position.

Senator NUNN. How about those two sentences that I read in the last paragraph? Is that the administration's position?

Secretary BROWN. By maintaining our program——

Senator NUNN. No, on the first page.

Secretary BROWN. That is [deleted] I think that would have to be reaffirmed in order to be an administration position.

Senator NUNN. You can't say it is not?

Secretary BROWN. I can't say it is not. I think it has probably been mooted by events since then, which would suggest that is not the case. It is not a position. It is an expression of opinion which I think has been shown not to be correct.

Senator NUNN. But isn't this clearly an expression of unilateral restraint, whether it is willed or not? That is a question of what the position is, unilateral restraint in the theory that the Soviets would demonstrate similar restraint, is it not?

Secretary BROWN. No; we don't know that they have started new munitions, binary munitions, or increased their stockpile even. What was really aimed at was something different. It was aimed at the negotiations and not at seeking a similar reciprocal unilateral step.

Senator NUNN. Mr. Secretary, would you agree or disagree with the following statement, and I quote;

[Deleted.]

Secretary BROWN. Since you won't tell me who said that, I think that I do agree with it.

Senator NUNN. It is General Rogers and it is dated December 19. How is that consistent with the fact you just said we have a credible deterrent?

Secretary BROWN. He is speaking of what is in his theater. As Senator Cohen pointed out we have very little in Europe and we would have to move it over there.

Senator NUNN. You are still saying that even though you agree with this we have a credible deterrent?

Secretary BROWN. Yes, part of it is what is in Colorado.

Senator NUNN. How do you understand the issue as it relates to command? There has been a lot of debate back and forth about who in the Soviet Union would have to give release authority for the use of chemical weapons. Does the Department of Defense have any real evidence as to what decisionmaking would have to take place, whether it would be at the field level or whether the Politburo would have to decide?

Secretary BROWN. I haven't looked at that. And maybe General Tighe knows. I am quite familiar with the situation on the nuclear side but much less so on the chemical side.

General TIGHE. We believe as a weapon of mass destruction it requires the highest general staff and possibly Politburo release for theater employment. We would expect—

Senator NUNN. Of weapon kills, you are addressing now?

General TIGHE. Yes. We would expect that that authority would get to the theater level because this is viewed as a theater weapon rather quickly.

Secretary BROWN. In a general war.

General TIGHE. [Deleted.]

Senator NUNN. [Deleted.]

Secretary BROWN. [Deleted.]

Senator NUNN. That it is vested at the highest level?

Secretary BROWN. [Deleted.]

Senator NUNN. A joint conference of House and Senate Armed Services Committees in 1977 had a requirement that a plan be submitted to Congress in February of 1978 for the funding and scheduling to incorporate collective protective systems in certain types of tracked combat vehicles by October 1, 1980. Of course we are almost there now. Do you have, Mr. Secretary, and if you can't can you secure for the record how many battlefield tracked weapons the United States currently has, tanks and personnel carriers, and how many of these vehicles have collective protective systems?

Secretary BROWN. Let me furnish it for the record, please.

Senator NUNN. How many XM-1's is the United States planning to buy and how many of those will have collective protective systems?

Secretary BROWN. I will furnish that for the record.

[Not supplied as of presstime].

Senator NUNN. Do you know offhand if we are putting any collective protective systems in the XM-1?

Secretary BROWN. I don't know. My recollection is that our present capability is nil, or very nearly, in the force for collective protection but I am not sure what the situation is for the XM-1.

Senator NUNN. Well, we have tried to encourage that from over here, but I know it is a cost factor. But as to the cost of this collective protection I think the chairman has been involved in that for several years, and the cost is not very great in comparison to the whole but it does add to the cost. Has there been any high level focus on that in terms of a tradeoff between the cost of that and the benefits?

Secretary BROWN. I know it hasn't reached me.

Senator NUNN. Who would be responsible for that?

Secretary BROWN. Well, the Army primarily. The Army would make the recommendation.

Senator NUNN. Would you furnish for the record as to what their recommendations have been made?

Secretary BROWN. Yes.

Senator NUNN. And some rationale for the decision that has been reached.

Secretary BROWN. I will.

Senator NUNN. Thank you.

[Not supplied as of presstime].

Senator EXON. I yield at this time.

Senator LEVIN. I appreciate your yielding time. [Deleted].

Secretary BROWN. [Deleted.]

Senator LEVIN. [Deleted.]

Secretary BROWN. [Deleted.]

Senator LEVIN. Do you know why President Ford rejected the request of DOD for funds for production?

Secretary BROWN. No I was not privy to that decision.

Senator LEVIN. Are you aware of the fact that he did delay the DOD request for these funds?

Secretary BROWN. Well, I thought there was a request in 1976 to the Congress.

Senator LEVIN. The Army has given us a document saying that in fiscal year 1978, DOD requested President Ford and it was denied by President Ford. Are you familiar with that?

Secretary BROWN. That is the fiscal year 1978 budget?

Senator LEVIN. Yes.

Secretary BROWN. No, I am not familiar with that but from the history that could be carrying out the Congress request not to come forward for another year, but I don't know.

Senator LEVIN. Would President Ford have not requested something he felt important because he thought the Congress would reject it?

Secretary BROWN. None of us do that, but when Congress directs us to do something, that has a bigger effect.

Senator LEVIN. Well, do you know whether he was directed by the Congress not to make a request?

Secretary BROWN. Even that kind of a request is not absolute in our constitutional system, but my understanding was, and I am speaking of fiscal 1977, and I don't know what the situation was.

Senator LEVIN. Perhaps you could supply that for the record.

Secretary BROWN. I will supply it for the record.

Senator LEVIN. Thank you, Mr. Chairman.

[Not supplied as of presstime.]

Senator HART. Let me ask two questions if I may. If the amount of chemical warfare agents we have now in our stockpile, [deleted] were to be used in its maximum capability, what does that represent in terms of number of deaths or disability?

Secretary BROWN. Let me try to get an answer for the record. It depends so much on how you use it and how effective you think they are, so let me try to find out. You can get some very large numbers by assuming that everybody is exposed but that is not how that works.

Senator HART. What would be, using for example as a benchmark the Army's standard request, the size of the stockpile with the kind of production that we are talking of [deleted].

Secretary BROWN. [Deleted.]

Senator HART. [Deleted.]

Secretary BROWN. I will have to check the exact number.

Senator HART. I understand. [Deleted.]

Secretary BROWN. Yes.

Senator HART. What estimates do you have about the sealift or airlift capability necessary to move that tonnage?

Secretary BROWN. Let me supply it for the record.

Senator HART. And over what period of time.

Secretary BROWN. I will supply it for the record.

[Not supplied as of presstime.]

Senator EXON. I came in late, Mr. Chairman, but I might yield to my colleague on my right who is visiting here today. Could I yield to Senator Pryor?

Senator HART. I think we should make sure everybody on the committee has had time to question.

Senator PRYOR. I think it is not appropriate at this time, but I enjoyed the exchange.

Senator HART. If they are high priority questions of the Secretary we want to get those out of the way, because General Tighe will remain, and the Secretary has to run over to the House side.

Senator EXON. I have no questions of the Secretary.

Senator BYRD. Mr. Secretary, how many chemical munitions production facilities does Russia have?

Secretary BROWN. I will have to turn to General Tighe.

General TIGHE. We are looking at [deleted] major production facilities, Senator Byrd.

Senator BYRD. [Deleted] major ones and there are other besides [deleted] major ones?

General TIGHE. It is a matter of specific identification of others that may or may not be.

Senator BYRD. Thank you.

Senator JACKSON. I want to get one thing clarified, Mr. Secretary, and, if necessary you can supply it for the record. I think we need to have the history here, of the evaluation of the administration's position on this binary facility construction project. I am interested particularly in the requests that were made by your office. As I understand it initially OSD directed the Army to make the request. Can you give us the whole story on that, and supply it for the record?

Secretary BROWN. You are talking about the fiscal 1981 budget process?

Senator JACKSON. Yes.

Secretary BROWN. Let me get you the record on that.

Senator JACKSON. Let us get the correct history of that.

Secretary BROWN, as I understand it, the Army complied with that directive and subsequently you went over with a bunch of options to the President, and this was one of them. It is important to know what DOD's position was at that time.

Secretary BROWN. Yes.

Senator JACKSON. I think I know what happened. The State Department and ACDA played a role as they did back in 1977 and again on down over the intervening period. They opposed any move toward binary production on arms control negotiation grounds.

Secretary BROWN. Certainly that has to be factored in. If it doesn't get factored in the first go-around in defense, it needs to be factored

in later in the budget process. That is part of the consultation on major national security issues with the Secretary of State to which we are all committed.

Senator JACKSON. But I would like to get OSD's position in this, and judgments. We have read Mr. Vance's letter of 1977 which is rather prophetic, as far as the administration's position was concerned. We can get all of those inputs from ACDA. What I would like is the full story on the input from OSD; I want OSD's point of view on this question.

Secretary BROWN. I can't myself at my level separate this entirely, but I will get you the records.

Senator JACKSON. Let us have the whole record on that so that we can make a proper judgment here.

[Not supplied as of presstime.]

Senator HART. Are you aware of any decision within the administration to actively consider certification in compliance with section 818 of Public Law 94-106 which requires the President to certify to the Congress that it is in our national interest before any funds are spent on binary chemical production?

Secretary BROWN. I am not aware of where that stands. Certainly before we spent any such funds we would comply with that law.

Senator HART. I have no further questions.

We will dismiss the Secretary with our thanks.

Secretary BROWN. Thank you very much, Mr. Chairman.

Senator HART. General Tighe, you might want to move up to the table.

**STATEMENT OF LT. GEN. EUGENE T. TIGHE, JR., DIRECTOR,
DEFENSE INTELLIGENCE AGENCY**

Senator HART. Did you have any questions of General Tighe?

Senator HUMPHREY. I will submit them in writing.

Senator HART. We want to restate the conditions here. If you go to codeword classified material, we will have to remove much of the staff, if not all of it.

General TIGHE. Mr. Chairman, let me suggest that I stay at the secret level, and if I get into a bind or seem to be hedging my bets a little bit, and you want me as a result of that to go to furnishing a very highly classified record, I will be very happy to do that, but I think I can answer most of your questions at the secret level.

Senator HART. You tell us if we get near that border.

Senator JACKSON, do you have a question?

Senator JACKSON. Well, first, I wonder, General, if I could ask you to review or elaborate on the Secretary's statement with reference to the alleged use of chemical agents in Laos and Afghanistan and wasn't Cambodia also mentioned at one point? Wasn't there an allegation of that?

General TIGHE. There have been allegations.

Senator JACKSON. And second, would you discuss the Sverdlovsk story now and specifically the kind of evidence that we have. I think you can do that within this context. When you get into the Sverdlovsk thing I think you get into the fact that the basis of our information there is human, isn't it?

General TIGHE. There are several facets to that. Let me describe just a bit that we have been putting together the story on Soviet chemical warfare capabilities and production and so forth over a very long period of time. We watched factories shipped out of Germany in the 1940's for example and we have been tracking them down and trying to keep track of them ever since. So what you hear when I tell any kind of a story about what is going on about chemical warfare anyplace, is a fabrication of a lot of little bits and pieces.

Some of it may be very sensitive, national technical means in origin, and some of it may be human. I will try to describe the sources and what we have been doing about those three particular incidents. As far as allegations are concerned, the judgment of the intelligence community at the present time, and this is based on an Army medical investigation of some of the personnel that were involved and a rather lengthy attempt to tie down what has been going on in Southeast Asia in the matter of chemical warfare.

The allegations concerns the years 1976 through 1979 in Laos and 1978 and 1979 in Kampuchi involving the PAVN forces and Vietnamese and Laotian People's Democratic Army in Laos. The judgment is, Senator Jackson, that the best we can do in tying that down is that the agents used in Kampuchea were some kind of a low-level riot control agents. We can't go any higher in our judgment although we have suspicions that there is not a great deal of distinction between the weapons used there and in Laos, but we have no basis for going beyond that riot control level, to lethal gas use.

The same thing is true in Laos although here the problem gets a little bit different because the distance involved by the time some of the cases were examined prevented as good as examination of the stories and evidence as we had in Cambodia. However the judgment is that there is a better than even chance that lethal chemical weapons were used in the area to the northeast, of Vientiane and Vang Pao's old territory. We can not tell whether or not the weapons used were used by the Laotian Peoples' Democratic Army forces or whether they were used by the Vietnamese [deleted].

Senator JACKSON. That is offensive chemical weapons?

General TIGHE. Yes. We know of no indigenous capability to produce chemical weapons in either country, either Vietnam or Laos.

As far as the Sverdlovsk incident—

Senator JACKSON. What about Afghanistan?

General TIGHE. In Afghanistan the evidence still comes in. [Deleted.] Our attention to the use of chemical warfare in Afghanistan stemmed from noting that the Soviets brought into the country all of their usual chemical warfare defensive apparatus. As a matter of fact, some of it was seen in the center of Kabul. The equipment we are talking about here for example is decontamination equipment both for vehicles and people.

The second thing that came up was the allegation by tribesmen who had come out into Pakistan that lethal chemical warfare had been used in Afghanistan. Finally of course [deleted] of incidents which although not directly provable indicate to us that lethal chemical warfare is probably being used. There is proof of it, first of all because these agents do not persist as you can imagine to the time when we can get at them [deleted.] We are not likely to be able to

prove it in the near term. As to the equipment we might get out, we have been trying very hard to get some definite proof that they are indeed using lethal or incapacitating chemical weapons. [Deleted.]

On the Sverdlovsk incident we have a case where a facility that we had judged to be a research institute for biological weapons [deleted] separate and unrelated sources by the way, each of which tallies quite close to the other, reported that an accident occurred in a military-run portion of the institute in April 1979. The explosion resulted of course in casualties which spread and could only have come from, in our intelligence judgment, a bacteriological warfare facility product, [deleted].

But we know for example that in none of the reports that we have on the incident were people who gave mouth-to-mouth resuscitation affected by the disease. [Deleted.] We note also that people who were exposed, doctors and others who were exposed to patients, did not suffer similarly, but the casualties were apparently very widespread and [deleted]. Here though we have very fragmentary evidence and no provable evidence. The Soviets say the problem was caused by a lot of sick cattle, which doesn't make any medical sense to anyone in this country. We don't know and they are not sufficiently forthcoming to bridge the gap between what we believe happened and what they say happened.

Senator JACKSON. Is that their primary facility, the one in Sverdlovsk, for producing weapons?

General TIGHE. I would like to explain the intelligence problem with BW. There are an awful lot of facilities that have all of the characteristics for a BW weapons facility.

[Deleted.]

We also know of course from open source literature of some of the activities concerned at a given time. Weaponization or military processing may be very much a part of a civilian process until the time they decide to weaponize. So it is very difficult to tell what they are doing in BW. By the way, I would like to add, too, when I spoke of estimates, the Soviets must surely be more sensitive to the charge of first use of CW or BW than anything else if the small volume of reporting of offensive use of CW is any measure. In all of the years of their capability, and we know they have everything that it takes to have a very large chemical warfare program, for example, they have production, and we see their testing facilities and we notice which weapons systems they are testing these on, whether they are artillery or mortars or rocket launchers or whatever. [Deleted.]

They have huge storage facilities that could handle a lot of weapons [delete].

Senator JACKSON. You mentioned that we had sighted the defensive systems in Afghanistan. The corollary to that is, have we sighted any offensive systems?

General TIGHE. The problem, Senator Jackson, is that the bombs look just like any other bomb.

Senator JACKSON. I was thinking of support equipment.

General TIGHE. They have the rocket launchers and they even brought SCUDS into Afghanistan and subsequently recalled them. We [deleted]. They have had the weapons systems in the country that could deliver chemical weapons.

Senator JACKSON. But to supply those weapons systems, don't they have to have special containers in support of the systems?

General TIGHE. [Deleted.]

Senator JACKSON. Do you have adequate analysts to really keep tab on the developments that we have discussed?

General TIGHE. Senator Jackson, you know that we never have what we would really would like to have and that is best proved when some of the materials we should be able to elaborate further on aren't properly explained. But I would say that the weapons of mass destruction [deleted].

[Deleted.] We are able to trace the use of agents since World War I, for example, and they still use some of the same types and they have done new things with them.

Senator HUMPHREY. Thank you, Mr. Chairman.

General TIGHE. I have been struck by your statements and those of Secretary Brown which indicate the difficulty of ascertaining facts about Soviet production. That is the difficulty of ascertaining facts about Soviet production capabilities for chemical weapons and even their use of them.

We evidently can't ascertain whether Soviet chemical weapons were used in Afghanistan. Evidently we are not absolutely sure that Soviets supplied them to Cambodian forces in Cambodia and Laos. How then can we possibly hope to have an enforceable and verifiable chemical warfare treaty with the Soviets if it is so very difficult to ascertain facts about production and deployment and use of chemical weapons?

General TIGHE. Of course, I wouldn't be prepared to understand how we would do something about treaty enforcement without knowing what the agreements were, and making a judgment on each of the specifics. I do believe, however, since it is only by, in my judgment, outstanding human intelligence that we are going to find out what their inventory is and which offensive weapons are really at specific locations and whether or not they have used them, that that is going to require very precise verification and onsite verification in order to do the same thing for treaty purposes I don't know any other way.

Senator HUMPHREY. Your official position is that this would require onsite inspections to verify that?

General TIGHE. Since I am not able to do it otherwise over a very long period of time and with a lot of study, I would be forced to say that.

Senator HUMPHREY. The Defense Intelligence Agency, according to the statement you just made, does not have the ability over a sustained period of time to adequately monitor Soviet capabilities with anything less than onsite inspection?

General TIGHE. We think we are able to monitor their ability to produce and their capability. What they are actually doing is something else and how much they have done is a matter that requires onsite verification.

Senator HUMPHREY. I want to be sure of your position. Are you saying then that as the Director of the Defense Intelligence Agency that if you were asked your opinion on any chemical warfare treaty that may be reached, or agreement which may be reached in the future, that your recommendation based on present technology

would be that such a treaty must have onsite inspection in order to be verifiable?

General TIGHE. Yes, sir.

Senator HUMPHREY. Thank you.

Senator NUNN. While we have General Tighe, from people who have approached this subject, which would be of advantage, I don't want to interrupt this dialog, but I would like to know a little bit about what the DIA knows about Afghanistan and Poland—but I don't want to interrupt this.

Senator HART. I want to give Senator Pryor an opportunity to ask a question, if he wishes. Senator Pryor?

Senator PRYOR. I could submit mine in writing, Mr. Chairman, and I deeply appreciate the opportunity which you gave me.

Senator HART. We are perfectly willing to have you ask questions.

Senator PRYOR. Could I ask one question which may be of interest to the committee?

I don't want to impose my time on the committee, but I am very concerned about this question.

Is there a military advantage to binary gas?

General TIGHE. [Deleted.]

Certainly, the military advantage of a binary agent is in the handling. In all of the disposal responsibilities that are inherent in even possessing the weapon, they make the military sense.

Senator PRYOR. But isn't our plan, if we instituted a plan, to manufacture binary gas and at the same time gain the destruction of our present stockpiles of conventional gas?

General TIGHE. I don't know that for a fact, but I understand that that is the plan.

Senator PRYOR. If that were the case, and if we proceeded with that plan, and we expended [deleted] in the process, what are we buying other than a safer type of gas to be stored and transported?

General TIGHE. It is much more cheaply transported and one that can be transported.

Senator PRYOR. How are we increasing our defense capability or our offensive ability to deploy nerve gas?

General TIGHE. I am not party to the advantages of the proposed new system, sir; but I would propose that there must be significant handling advantages, and that has to do with the quality of the manpower that you need to handle it, and the security and so forth, which could be of considerable advantage.

Senator PRYOR. I would like to state for the record, Mr. Chairman, that I feel that what we are purchasing with [deleted] is not a great deal more in the ability to deliver or to defend ourselves against any Russian attack with nerve gas, but basically it is to buy or to substitute a safer type of nerve gas. I don't know whether we are proceeding along the right track.

General TIGHE. I am sure you have received a lot of other testimony on this subject, but I understand, of course, that the current inventory won't last forever. It is not a matter of having it as an either/or proposition, but that is something that I am sure is very important.

Senator PRYOR. Thank you, sir.

Senator EXON. General, we have heard about these things many times in Laos and Cambodia and Afghanistan. Can you tell us from

your knowledge, if we should become involved in an armed conflict with the Soviet Union, what is your reading of their capability in this area? We have heard about the anthrax problem in the Soviet Union, which the Secretary touched on this morning. Do you believe that the Soviet Union is building up their offensive facilities in this area, or are they experimenting in this area now?

Let me ask you this question: Would they have the capability now to launch an extensive type of nerve gas warfare in Europe in case they should decide to launch an attack?

General TIGHE. I will give you my view based on all of the evidence that I do have. I say this because I have described that they have the doctrine, they have the research and development facilities, they have major capital investments in production of chemical weapons, and they have major capital investment in storage of chemical weapons, [deleted]. With that in mind, it is my judgment that the Soviet Union considers a chemical weapon in mass use at the theater level as having significant advantages in wartime and would use them, particularly if they thought they could use them without nuclear retaliation.

That is, as they get further into a doctrine of incremental nuclear application, if they can use CW without getting an immediate strategic response, I think that they see it in three roles. Not only is it an antipersonnel weapon, but I think that they see it also as a "corridor denial" weapon and as an urban area denial weapon.

I think that they judge the NATO capability to be extraordinarily low; therefore, when I see them deploy all of the protective equipment against CW—and spend all of the money that they are spending against what they judge to be a very minimal capability of NATO to do anything, I must judge that they plan very much to use it, and that they expect it will very effective against our troops.

Senator EXON. You take it then, by that answer, that you are very much concerned about this. Do you, therefore, think we should do more than we are doing now?

General TIGHE. I am not an expert on what the United States is doing now. I have listened to the Secretary's testimony. Other than that, I have paid very little attention to what the United States is doing about the problem. I try to concentrate on the other guy. But it is my considered opinion that we are doing very, very little indeed or at least we are perceived as doing very little about a serious challenge. We should at least be perceived as doing something.

Senator EXON. Thank you, General.

His statements concern me very much, Mr. Chairman.

Senator HART. The phrase, "doing something" I take it would include defensive as well as offensive?

General TIGHE. Defensive would enjoy my first priority across the board.

Senator HART. You can't fight a chemical war if your own troops are going to be the first people to suffer?

General TIGHE. That is exactly right.

Second, I don't believe that you will get into any kind of a negotiating position with the Soviets unless you have something to match what we perceive them to have, and that is why I say, "perceptions." I wouldn't be in a position to judge the realities of the offensive capability.

Senator NUNN. General if it makes you feel any better, if you

want to revise anything, I asked one of the members of the Politburo 2 years ago about chemical weapons, and he gave me, on his honor in front of witnesses that there were no chemical weapons whatsoever in Byelorussia. He didn't go beyond that, and that was his region; but based on those strong words of assurance, you might want to take a look at it.

General TIGHE. He probably had more years in the intelligence business than I do.

Senator HART. Thank you very much General Tighe, and we thank the Secretary.

[Questions submitted for the hearing record follow:]

QUESTIONS SUBMITTED BY SENATOR GARY HART, ANSWERS SUPPLIED BY HON. HAROLD BROWN, SECRETARY OF DEFENSE

Senator HART. Mr. Secretary, you have discussed the general situation with respect to Soviet chemical warfare capability. Let's focus for a moment on their offensive capability. What kinds of weapon systems do they have that can deliver chemical agents?

ANSWER. Weapons systems available to the Soviet Union for delivery of chemical agents include artillery projectiles, multiple rocket launchers, tactical rockets, tactical missiles and aerial bombs. Chemical agent fills would vary with the intended tactical mission.

Senator HART. Based on the best intelligence that we have, how many chemical weapons do the Soviet have—perhaps it will be more informative to speak in terms of chemical agent tons—how many tons of chemical agents are available to the U.S.S.R.?

ANSWER. Our best estimates, based on both extensive studies of Soviet tactics and doctrine [deleted] would indicate that Soviet stockpiles are in the range of [deleted]. This [deleted] range indicates the uncertainty noted in the statement, we are more sure of their defensive capability than we are of their offensive capability. [Deleted] but we know an offensive capability exists.

Senator HART. Is all of this tonnage available for immediate offensive use—or is some in bulk and some in unserviceable munitions—as is the case in the United States?

ANSWER. We do not have good estimates of the [deleted]. All such suspected areas are closely monitored to refine our estimates.

Senator HART. Is there an approved and accepted requirements document that shows what the United States requirements are for chemical munitions? I am speaking of something like the Stockpile Memorandum that the President approves for nuclear weapons, or the Authorized Ammunition Objective (AAO) that Defense approves for conventional munitions. What I am looking for is something that says that we need in the way of chemical munitions, by munitions type, by chemical agent.

ANSWER. There are accepted and approved chemical munitions requirements documents [deleted]. These specify [deleted]. Since we are considering only munition items already in the stockpile [deleted] do not generally address this requirement.

Senator HART. I have seen a chart that plots United States chemical agent tonnage versus time. That chart showed a horizontal band at one specific tonnage range which was labelled "JCS reasonable assurance level." What is the "JCS reasonable assurance level" and how was it derived?

ANSWER. The "JCS reasonable assurance level" is [deleted] munitions. This was derived from [deleted].

Senator HART. The House has proposed adding funds to build a facility for binary 155mm artillery rounds. This is a very short range round. If the decision was made to proceed with binary munitions, is the 155mm artillery round the top priority? Wouldn't it make more sense to start with some munition that has more range and therefore more targeting flexibility?

ANSWER. The facility under consideration would be of modular construction—designed for separate binary ingredient production and separate modules for the loading, assembling and packaging of both artillery projectiles and the larger items such as bombs or missile warheads. The initial module is planned to include basic utilities (power, water, waste) and the security and safety equipment (fenc-

ing, lighting, intrusion, alarms) for follow-on construction. The modular design allows phased decision points, so that substantial recovery of equipment costs would be realized in the event, or when, no further modules were necessary. Currently, plans exist for modules for three chemical weapons (155mm GB projectile, the Bigeye bomb and the 8-inch VX projectile). Consideration of the multiple rocket launcher warhead has been deferred to a later date. The present cost estimate for the planned modules is \$156 million.

Rescheduling of the construction of the present modules is now under active consideration. It may be possible to construct the first two phases on a concurrent basis. This would provide the capability to produce aerial delivered bombs (Bigeye) early in any subsequent construction. Such bombs would provide, as you suggest, more range and targeting flexibility.

Senator Hart. The House has added \$3.2 million for the construction of a binary facility at Pine Bluff Arsenal, Arkansas. In addition, \$19 million is needed to equip this facility. This appears to me to be just the tip of the iceberg. What would it cost to build the facilities and produce the binary munitions to completely replace our existing stockpile?

ANSWER. As noted in the response to the previous question, the present cost estimate for construction of the three planned modules is \$156 million. No firm estimates have been made for the production costs of the items which these modules would be capable of producing.

Senator Hart. The House has picked Pine Bluff Arsenal, Arkansas, as the site for the Phase I binary facility. Has your Department done any study of where a binary facility should go to include the necessary environmental assessments? Is Pine Bluff Arsenal the best site for a binary facility?

ANSWER. The Department of the Army performed a site survey in 1972 of available locations for a binary facility, and Pine Bluff Arsenal (PBA) was proposed as the most feasible location after consideration of a 22 possible sites. In 1975, a second study was conducted where PBA was confirmed as the preferred site. Following this action, a more comprehensive study was performed in 1978 where 44 sites were considered and additional factors such as safety, security, utility support, personnel availability and environmental considerations were all applied to the selection process. Based on these studies, PBA has been selected as the optimum site for an integrated binary facility. The last study specifically included an environmental assessment.

Senator HART. Mr. Secretary, Section 818 of Public Law 94-106, the Fiscal Year 1976 Defense Authorization Act, requires the President to certify to the Congress that it is in our national interest before any funds are spent on binary chemical production. I assume you are familiar with that provision? Has any such certification been made? To the best of your knowledge, is such a certification now being actively considered within the Administration?

ANSWER. We are familiar with the provisions of Section 818 of Public Law 94-106 and no certification to the Congress regarding necessity in the national interest has been made nor is one under consideration at this time. We generally agree with the House of Representatives Report No. 96-1009, where on page 7 it is stated: "Under current law, 50 U.S.C. 1511, funds may not be used for the production of lethal binary chemical munitions unless the President certifies to the Congress that such production is essential to the national interest. Insofar as the committee is concerned, the prohibition does not apply to the development of a production facility."

QUESTIONS SUBMITTED BY SENATOR JOHN TOWER, ANSWERS SUPPLIED BY
HON. HAROLD BROWN, SECRETARY OF DEFENSE

SOVIET CHEMICAL THREAT IN CENTRAL EUROPE

Senator TOWER. Much has been said recently about the Soviet CW capability. They are said to have stockpiles of chemical agents far greater than ours, and any question about their willingness to use such weapons has been answered in Afghanistan. Would you comment on the Soviet chemical threat in Central Europe?

ANSWER. Based on the information currently available to us, the Soviet chemical threat is real. The chemical weapons they possess are a mix of what we term World War I agents (mustard, etc.) and present day nerve agents. The Soviets

have the means to deliver these agents as well, including tactical missiles, aerial bombs, and artillery.

Senator TOWER. If attacked by Soviet troops using chemical agents, how will NATO respond?

ANSWER. A NATO response to Soviet chemical attack would vary according to the circumstances of Soviet use. [Deleted.] We have maintained and plan to continue to maintain the ability to respond to Warsaw Pact attack with an appropriate response and in the event the Soviets used chemical weapons we would seriously consider including them in our response. The United States has that option for two reasons. First, by providing other-than-nuclear response options, the nuclear threshold is not lowered. Second, since an enduring chemical defense posture is extremely debilitating, it would be an important influence on the outcome of the battle to insure that Warsaw Pact Forces were in at least the same posture. This can only be done by demonstrating the capability and the intention to retaliate with chemical weapons.

SENATOR TOWER. Do you believe that a NATO stockpile of chemical weapons would deter the Soviets from first use of such weapons?

ANSWER. An adequate chemical weapon retaliatory capability, coupled with an adequate defense/protective posture, would be more likely to deter the Soviets from first use of chemical weapons than if we depended solely on other conventional or nuclear weapons for this role. However, the Soviets are well prepared to fight on a chemical battlefield, and they could decide to initiate chemical warfare despite such U.S. efforts.

Senator TOWER. Does NATO have a credible CW deterrent retaliatory capability? How much is there, and how much is needed?

ANSWER. NATO continues to maintain a chemical retaliatory capability [deleted].

It is impossible to determine what quantity would be required to prevent the Soviet side from resorting to the use of chemical weapons once war broke out; they could use chemical weapons regardless of the size of our stockpile. But we believe, based on historical experience, that a credible chemical stockpile forms an important element of deterrence. Current stocks available to NATO include those U.S. stocks for which NATO maintains delivery systems. No specific part of the U.S. stockpile is designated for NATO use other than those stocks presently deployed in the FRG [deleted].

Senator TOWER. Would binary munitions provide such a deterrent capability?

ANSWER. Binary munitions, being as militarily effective as the current munitions, provide the same deterrent capability. They would provide a more credible deterrent than the current stockpile since they can be produced in the proper mixture of ground vs. aerial delivery systems and the proper mixture of persistent vs. nonpersistent chemicals to provide the tactical military commander maximum flexibility with modern delivery systems.

Senator TOWER. Are binary munitions safer to store and handle than the weapons currently stockpiled in West Germany?

ANSWER. Binary munitions are much safer to manufacture, store, transport, and demilitarize than current stockpiled items. No lethal materials are present in the binary munitions, only low toxicity chemicals are present until the munition has been delivered to the target.

Senator TOWER. In your opinion, would it be wiser to produce binary weapons or to reopen the fill line using stockpiled bulk agents?

ANSWER. It is considerably wiser and much more economical to produce binary munitions. The present fill lines are generally in high population areas, require stringent environmental and occupational safety and health requirements since lethal chemicals are handled. Cost and time estimates to reopen existing facilities are comparable to the construction of a new binary facility in a new, more acceptable location. Additionally, the long-term costs for eventual disposal of binary items is small compared to disposal costs for current lethal agent filled munitions.

Senator TOWER. On June 9, 1980, you informed Senator Stennis that inclusion of military construction funds in the fiscal year 1981 budget for a binary production facility in Pine Bluff, Arkansas, was "premature". Do you still consider such funding premature?

ANSWER. The pros and cons of binary modernization are now under examination and we expect to complete our review in time for a decision to be made this Fall in connection with the development of the fiscal year 1982 budget. We are not seeking such funds in the fiscal year 1981 budget.

Senator TOWER. Does DOD favor production of binary weapons?

ANSWER. We are reviewing all of the advantages and disadvantages of the various means of upgrading our chemical weapon stockpile. That review, however, is not yet completed. We can say that the binary approach has many advantages over current munitions, primarily substantial safety improvements in the total life cycle of manufacturing, storage, transportation and disposal. However, as stated previously, a final decision will not be made until the on-going review is completed.

Senator TOWER. How much will it cost to upgrade the Pine Bluff facility to the point where it is capable of producing binary weapons?

ANSWER. Present planning for the construction and equipment to produce Bigeye binary GB bombs, 8 inch VX and 155mm GB artillery projectiles is \$156 million. If additional modules for other munitions is required at a later date, additional costs are anticipated.

NATO CW RETALIATORY DETERRENT CAPABILITY

Senator TOWER. How much will it cost and how long will it take to provide NATO with a credible CW retaliatory deterrent capability?

ANSWER. A dual approach to providing NATO with a credible CW retaliatory capability is to continue to maintain current usable munitions and proceed to binary. It is estimated that [deleted]. The binary program, as presently envisioned with a binary facility construction start in fiscal year 1982, would have the following costs associated with the program:

Funding of Facility in dollars in millions

[Deleted].

The present program envisions the [deleted] planned production capability is [deleted].

With a binary production start for [deleted].

Senator TOWER. How does the absence of a chemical retaliatory deterrent affect the threshold of a theater nuclear exchange?

ANSWER. [Deleted].

Senator TOWER. Have efforts to reach an arms control agreement for chemical weapons been successful?

ANSWER. Bilateral arms control negotiations with the Soviet Union to ban chemical weapons have been underway since 1977. To date we have been unable to reach an agreement on the critical issues of stockpile and facility declarations and verification measures, but the bilateral negotiations are scheduled to continue in 1981.

[Deleted]. We will continue to support the negotiating efforts.

Senator TOWER. If efforts are not taken to improve the U.S. CW capability, will the current imbalance remain static or get worse?

ANSWER. The imbalance will continue to worsen as additional munitions deteriorate with age or become obsolete as a result of modernization of delivery systems. Some balance will be possible in the near term (the next several years) due to the ongoing maintenance program, however, over the long term, further degradation in the stockpile is inevitable.

QUESTIONS SUBMITTED BY SENATOR STROM THURMOND, ANSWERS SUPPLIED BY HON. HAROLD BROWN, SECRETARY OF DEFENSE

Senator THURMOND. Mr. Secretary, it appears from your statement that the the effort of the United States to determine what happened at Sverdlovsk is dependent upon a bilateral consultation with the Soviets. Does the Administration really expect the Soviets to admit that they are building biological weapons?

ANSWER. [Deleted.] We believe that they have an obligation to consult on this matter under Article V of the Biological Weapons Convention (BWC). [Deleted] believe that a dialogue with them, particularly on the technical level, would enable us to further focus our concerns.

Senator THURMOND. What international bodies are being used to press for more information on the deaths of large numbers of Soviet citizens at Sverdlovsk?

ANSWER. In accordance with the terms of Article V of the Biological Weapons Convention which encourage consultations among parties if questions arise concerning the goals or implementation of the Convention, we have so far limited

our undertakings to demarches to the Soviet Union requesting consultations. We have also held discussions with some of our Allies to keep them informed of our concerns.

Senator THURMOND. Mr. Secretary, how do you support your contention that the U.S. is prepared to retaliate if the Soviets utilize chemical warfare?

ANSWER. In accordance with the United States policy to be prepared to retaliate with chemical weapons to a chemical weapon attack, we maintain a sizable stockpile of varied lethal chemical munitions. Congress has provided funds for the maintenance of our chemical weapon stockpile, and although it is aging, it is not ineffective. We are also devoting significant resources to the protective equipment and training that any retaliation would require. A principal purpose of our current policy review is to determine whether our preparations are adequate.

CHEMICAL WEAPONS

Senator THURMOND. What quantity of chemical weapons do you feel are needed to retaliate effectively and do we have that quantity?

ANSWER. The JCS requirement for a CW stockpile is [deleted]. A Korean and Middle East 30-day scenario calls for [deleted].

The requirement for Central Europe is being refined through a study being conducted by the Institute for Defense Analyses. Initial study findings indicate [deleted]. If NATO initiated the use of [deleted].

The national stockpile consists of [deleted].

Additionally there are [deleted].

Senator THURMOND. How much money was being spent in chemical warfare research over the past three fiscal years and how much is to be spent in fiscal year 1981?

ANSWER. Defensive research and development funding for fiscal years 1978 through 1981 are respectively: \$34.9 million, \$40 million, \$65.8 million, and \$85 million. Retaliatory research and development funding for fiscal years 1978 through 1981 are respectively: \$6.8 million, \$3.9 million, \$5.4 million, and \$3.2 million, all on binary munition systems.

Senator THURMOND. Do you consider this program adequate in view of recent revelations on the Soviet chemical warfare programs?

ANSWER. We have doubled the R&D funding over the past 3 years, from approximately \$40 million to \$80 million, however, additional funds are required to enhance the technology base activities. New concepts for protective materials, detection devices, non-corrosive decontaminants, and improved prophylaxis and antidotes are required to provide more complete solutions to the many problems. The Defense Science Board has reviewed this area and their report recommends substantial increases in basic and applied research, primarily to be placed with academic and industrial sources to develop these new concepts. Some additional funding is also required to accelerate completion of ongoing development programs; approximately \$5 million for the improved personal protective mask, the advanced alarms systems, decontamination equipment and collective protection for vehicles.

Senator THURMOND. Explain your position that we would use nuclear weapons to respond to a chemical warfare attack by the Soviets.

ANSWER. The United States response to Soviet use of chemical weapons would depend on the circumstances of Soviet use; [deleted]. We have a variety of options available, including the use to nuclear weapons. But given our desire to avoid the uncertainties associated with nuclear use, as well as shifts in the theater nuclear and strategic nuclear balances, nuclear weapons alone are not an adequate deterrent; [deleted].

Senator THURMOND. How do you classify a defensive chemical warfare weapon as opposed to an offensive one? How do the defensive weapons serve as a deterrent?

ANSWER. An adequate defensive posture of U.S. forces is essential since our national policy requires us to survive a first strike or surprise attack and then continue military operations. A defensive capability does not involve weapons but is comprised of personal protective equipment, detectors and chemical agent alarms, decontamination equipment, medical antidotes and casualty care. An adequate defensive posture combined with a credible retaliatory capability provides a deterrent. Protective measures, by themselves, are not an adequate response to the use of chemical weapons, because of the debilitating effect of protective equipment on mobility, flexibility and human endurance.

Senator THURMOND. How long will it take to develop a binary weapon at the requested rate of spending? What additional funding would be needed to expedite this program?

ANSWER. There are three binary weapons in the development cycle; the 8-inch VX artillery projectile to be completed this year, the Bigeye VX bomb to be completed in fiscal year 1983 and the multiple launched rocket system in advanced development. The facility to produce the 155-mm GB projectile, the Bigeye bomb, and the 8-inch projectile can be completed in approximately 4 years. Additional funding in the R & D program for the rocket system and a cruise missile warhead, approximately \$5M/year, would accelerate these items by several years. Additional funding for further construction is not required in the near term since development and design must be completed prior to construction of facilities.

NONLETHAL CHEMICAL WEAPONS

Senator THURMOND. Mr. Secretary, can you explain in more detail the use of what you term nonlethal chemical weapons by the Soviets in Afghanistan?

ANSWER. The use of nonlethal chemical weapons in Afghanistan by the Soviets can best be described by the following incident: Afghan rebels fired on the Soviets and the Soviets retaliated, using an unidentified gas which rendered the rebels unconscious. The Soviets then moved in, and disarmed the rebels. Thus, in general, a nonlethal chemical agent does not cause fatalities. Thus far, however, we have been unable to identify the agent used by the Soviets.

QUESTIONS SUBMITTED BY SENATOR BARRY GOLDWATER, ANSWERS SUPPLIED BY HON. HAROLD BROWN, SECRETARY OF DEFENSE

Senator GOLDWATER: Can you confirm, as has been alleged, that no leak investigation was requested of the Justice Department on this subject until August 26 of this year?

Answer: Yes. Dr. Perry and ADM Murphy had discussed investigating the leak that led to the 28 June Washington Post article. Both agreed at that time that it was better to ignore the article in hopes that it would not be picked up.

Senator GOLDWATER. What was the sequence of events which led to the press conference where the existence and details of the program were confirmed?

ANSWER: The stealth program was based on a number of low observable research efforts conducted for many years by the Defense Department. This research had advanced to the technology demonstration phase by 1977. After reviewing this technology in the summer of 1977, the Department recognized the great military potential; it decided to substantially increase the level of effort on technology development, to accelerate applications of the technology, and to place the entire effort in a special security compartment. The objective of this newly established security program was to protect the technical aspects of stealth—the quantitative results achieved and how they had been achieved as well as the operational aspects. It was also decided to classify the existence of the stealth program for as long as practical. While the judgment then was that the program would soon reach a size where it was no longer practical to conceal its existence, it was believed that the operational aspects could be protected for any specific system until that system was operationally deployed, and the technical aspects could be protected indefinitely. A stealth security program as well as management and budget procedures were developed.

At that time Dr. Perry reviewed this program and the associated security concepts with the Chairmen of the Armed Services Committees and the Defense Subcommittees of the Appropriations Committees. They asked to have a few other members briefed. The resulting security procedures with respect to Congressional oversight were fully implemented by the fall of 1977 and were in place in the spring of 1978 during our fiscal year 1979 budgetary review.

The first break in the newly implemented security program came in June 1978. At that time Mr. Ben Schemmer of the Armed Forces Journal (AFJ) came to Dr. Perry with a written story describing the existence of the stealth program, and listing technical aspects of our test program. Dr. Perry did not confirm or deny the story, but urged him not to publish it on national security grounds. Mr. Schemmer did agree to withhold publication as long as the story was not published elsewhere. We did, as a result, gain an extra two years of protection with respect to public knowledge of the existence of the program.

The program continued for more than two years without significant security breaks. In the meantime the program was growing substantially in size. By the summer of 1980 it had increased a hundred-fold above what it had been at the

beginning of 1977. There were more than double the number of contractors on the program. The briefings to key members had been extended to additional subcommittees and, at the request of the Chairmen, made substantial increases in the number on the original four committees. A number of additional people in the Defense Department were also briefed. All of this was the inevitable consequence of the increasing size and scope of the program. Moreover, the Department had already started preparation of the fiscal year 1982 budget and could see potentially greater problems in the near future. In particular, it was believed that it would be necessary to brief all members of four—perhaps six—congressional committees (and selected subcommittees) no later than January 1981 when the fiscal year 1982 budget hearings began. In fact, one Chairman had already asked that all of his members be briefed into the program.

The first published security break in the program occurred on 28 June 1980 in a Washington Post article which described a new secret bomber under development which was "invisible to enemy radar." Dr. Perry discussed this article with Admiral Murphy to determine whether we should request an investigation of the source of the information. They both agreed that it would be better to ignore the article in hopes that the story would not be picked up.

Shortly thereafter, Dr. Perry met with the Secretary of Defense to discuss security aspects of the stealth program. He advised the Secretary that he should not respond to the 28 June leaks, but that he did not believe that we would be able to conceal the existence of the program much longer. He told the Secretary of the necessary increases in the number of people to be briefed in the Defense Department, in the Congress, and among the contractors, and noted that further increases were in store. He summarized by saying that he believed program existence already was starting to leak out and a controlled announcement would be better than a series of leaks. Dr. Brown was concerned that if the program started to leak, a flood might ensue, and that some of the really sensitive information might be disclosed along with the program's existence. Dr. Perry recommended continued program classification but that DOD should be prepared to respond quickly to more leaks. Dr. Perry's recommendation was accepted and he began the preparation of revised security guidelines to be used if necessary.

While these revised guidelines were still in preparation, there followed in rapid succession three media stories giving increasingly greater detail on the stealth program: Aviation Week and Space Technology on 11 August; the Washington Post on 14 August; and ABC News on 14 August. On seeing the first article Dr. Perry told the Secretary that there was a potentially serious problem developing sooner than had been anticipated. He accelerated preparation of the new security guidelines and offered to have them ready for DOD review by the end of the week. The major security break occurred on 14 August in the Washington Post article, and irretrievably compromised the existence of the program. The significance of this leak was not in its specific content (it had little technical detail) but in the fact that someone with access to the stealth program was making unauthorized disclosures of classified information. While this leak only accelerated by a few months what had already been considered to be inevitable, the major concern was that there was an imminent danger of having really damaging information come out, particularly in view of the details that already had been obtained (in 1978) by Armed Forces Journal.

On 14 August Dr. Perry forwarded to the Secretary proposed new security guidelines which declassified program existence but drew a new line protecting sensitive technical and operational details. Dr. Perry recommended that the new security guidelines be implemented immediately as a damage-limiting tactic. Dr. Brown asked Dr. Perry to prepare implementing plans and to meet with himself and the Secretary of the Air Force on 16 August.

On 16 August Dr. Brown reviewed with Dr. Mark and Dr. Perry the proposed new guidelines which declassified program existence, established a secret level classification for some non-technical programmatic information, and maintained top secret classification for technical and operational details. These new guidelines had been reviewed by Dr. Perry, by Dr. Mark and by General Allen prior to the meeting. Everyone advising the Secretary agreed that the Washington Post article was a serious matter that could not be ignored. General Ellis, SAC Commander, cabled General Allen that he believed that this leak threatened the viability of the program and that the story should be discredited. Dr. Perry's advice, and that of Dr. Mark, was that the damage could not be undone; to deny the story would be infeasible as well as improper and a "no comment" would not stop the inquiries but rather stimulate them. However, it was believed that what

had been revealed in no way threatened the very great—indeed the revolutionary—value of the program to our national security. The real concern was centered on the potential revelation of technical details which could facilitate Soviet countermeasures. No such information had been released at that time; but, given the clear signs in the 14 August Washington Post article that someone with access to the stealth program was disclosing classified information, there was a risk that further disclosures might be made at anytime.

The Secretary approved the proposed new security guidelines with some modifications aimed at further limiting the information to be declassified. He directed the Assistant for Legislative Affairs to arrange for secret level briefings as soon as possible to the full membership of the Armed Services Committees and the Defense Appropriations Subcommittees of the Appropriations Committees and directed the Assistant for Public Affairs to prepare a press release compatible with the new security guidelines. August 22 was set as a tentative date for public release, subject to the congressional briefings being accomplished by then.

At the conclusion of the meeting, Dr. Perry pointed out that Mr. Schemmer, Editor of the Armed Forces Journal, had been withholding this story for more than two years at his request. Dr. Perry requested permission to give Mr. Schemmer an early release on a story consistent with the new security guidelines. This early release was a fair response to AFJ withholding the story; it also gave the Department an opportunity to request deletion of some of the technical details in the original story; Dr. Brown agreed to that request.

On August 18, Dr. Perry met with Mr. Schemmer, told him that the stealth story was leaking, that we believed we could no longer conceal its existence, and that we were going to make a public release soon, probably on August 22. Because he had withheld the story for two years, Dr. Perry was willing to give him a one day early release on the story. Dr. Perry did not release classified information to him; rather he answered within the new security guidelines only such questions as he would have been willing to answer at the August 22 press conference, and declined to answer questions that he would not have answered then. So Mr. Schemmer was not getting different information from the rest of the press; he was just getting it earlier. However, there was a significant difference in that he already had in 1978 a significant amount of information on the program, some of which was still classified, and his story of course was likely to be a mixture of both kinds of information. Fortunately, he was willing to allow Dr. Perry to review his draft before publication. Dr. Perry requested that he delete about a dozen items in his story, several of which were of particular importance from a security point of view. He complied with that request and program security was substantially served as a result.

On August 20 Dr. Perry briefed the four relevant Congressional committees at a classified level as determined by the new guidelines. The briefing consisted of a short non-technical description of major programs underway and funding associated with the programs. Dr. Perry presented a notional model of one of the vehicles and told them that we had declassified the existence of the program, but that the nature of specific programs and funding profiles they were receiving was classified. He also explained that he was not briefing them on the sensitive technical and operational details of the program which would continue to be classified at a much higher level, and access to which would continue to be limited to a named list of people.

On August 22, Dr. Brown, Dr. Perry, and Lt. Gen. Burke held a press conference on the program. No classified information was disclosed at this press conference. In particular, they discussed none of the information—at the secret level—on programs and funding that was briefed to the Congress on August 20. Their statements and transcripts of the questions and answers are available for review.

Senator GOLDWATER. What rationale prompted you to override the reported objections of the Commander of SAC and the Air Force Chief of Staff when you elected to confirm the existence of the Stealth program?

ANSWER. As indicated in a previous response, the Department felt that to deny the story would be infeasible as well as improper, and a "no comment" would not stop the inquiries but would only stimulate them. It was clear that someone with access to classified program information was talking to the press. As of that time, he had not released any technical information which would have been damaging to national security. But the Department had no way of knowing what other information he would choose to release, or whether he would even know which information was most sensitive. Therefore, it was believed the most prudent course was a public release declassifying what had already effectively

been revealed, while reemphasizing the importance of protecting the technical details. To date this has been successful. No technical data of any security significance has been revealed and the Department believes it can continue to protect this vital information.

Senator GOLDWATER. When was the first public disclosure of the existence of the Stealth aircraft program? Was any investigation conducted at that time or subsequently to determine the source of the leak? What were the results of that investigation? When did succeeding public disclosures occur?

ANSWER. Prior to the summer of 1977, there had been several technology programs addressed to stealth (i.e., reducing observables). The existence of these programs was not protected in any way; so release of information on the existence of such programs prior to 1977 did not constitute a security violation and there was no investigation. In the summer of 1977 the Department of Defense (DOD) conducted a review of low observable efforts. It was decided to greatly accelerate the program and establish a new security system to include classifying the very existence of the program for as long as possible. Several low-key, non-specific references to low observable technology were made subsequent to program classification, including one by Gen. Burke in January 1980, and by Dr. Perry in congressional testimony. However, the first public disclosure of the existence of a classified stealth program was made on June 28, 1980 in the Washington Post (a brief reference to a stealth bomber). At that time, Dr. Perry and Adm. Murphy discussed investigating the leak that led to the June 28 Washington Post article. Both agreed that it was better to ignore the article in hopes that the story would not be picked up. Then on August 11 in Aviation Week and Space Technology an explicit reference was made to the stealth bomber program and on August 14 the Washington Post stated that a secret stealth bomber was about to be revealed. The significant point of these disclosures in August is that they provided clear evidence that someone with access to the classified program was making an unauthorized release of classified information. That was the first time in three years that such a violation had taken place. It was clearly a different situation from other press reports, which were speculative about potential technology efforts, or were limited to carefully controlled releases made about studies of low observable techniques.

On August 16, the Secretary of Defense decided to declassify the existence of the stealth program while drawing a tighter barrier around the technical details whose disclosure could facilitate a Soviet countermeasure program. On August 22 he made a public release on the existence of a stealth program. On August 26, subsequent to the public release, Adm. Murphy initiated an investigation of the source of the August 11 and August 14 leaks. The President has since directed the Attorney General, with the assistance of the FBI, to take over investigation of the leaks in order to broaden the investigation beyond the Defense Department.

QUESTIONS SUBMITTED BY SENATOR CARL LEVIN, ANSWERS SUPPLIED BY
HON. HAROLD BROWN, SECRETARY OF DEFENSE

BINARY FACILITY AND BINARY MUNITIONS

The following paragraph responds to a series of questions from Senator Levin on the binary facility and binary munitions:

The total cost of binary weapons production facilities is estimated to be about \$185 million during the next few years? How much would you expect it would cost to actually produce and maintain the required number of weapons you think are required?

It is my understanding that DOD and the Army have studied alternatives to producing binaries, such as taking a present large stockpile of bulk chemical agents and filling munitions with this stockpile. What would be the costs for each of these options considered?

Is it possible to restructure the present three-phase program being considered to produce binaries to switch the timing of production of artillery shells vice the Bigeye bombs, which we might be in a better position to deploy in Britain earlier because of the receptivity of the Thatcher government? What would be the cost and schedule effects of re-phasing the program in this manner?

Wouldn't this be wise to insulate the mainland Europeans from the chemical weapons "fallout" we could expect—especially the Germans, for as long as pos-

sible to give us more time to try to convince them to accept forward deployment of binaries?

It is my understanding that the \$3.15 million addition in fiscal year 1981 really will not result in a significant acceleration of the binary program without the addition of \$19 million to buy production equipment itself in fiscal year 1981's defense appropriations act. I understand this acceleration would only be about 3 months without the \$19 million addition. Do you agree with these statements?

For example, the Executive Branch might decide to accelerate production of the Bigeye Bomb with VX nerve agent for the Air Force and Navy rather than move first with production of the 155 millimeter shell for the Army—in part to reduce the diplomatic political fallout in Europe which could interfere with forward basing—could it not?

Are there any operational or technical characteristics of binary munitions which make them more compatible with existing and new delivery systems than present chemical munitions dedicated to these same systems?

There have been reports that binary munitions will not represent any improvement over the chemical shells they will replace in terms of range and accuracy, despite past claims that would be the case. Is this true, and why or why not?

Is it the government's intention to replace our current chemical weapons stockpile with binaries, or to add to it with these munitions until the JCS requirement level is reached? Provide cost and schedule data for both options.

What specific military advantages, if any, exist, with binary chemical munitions as compared with non-binary chemical munitions in terms of transport and handling of the munitions from munitions depots to battle areas, and in the battle areas themselves?

The facility now under consideration would be of modular construction—designed for separate binary ingredient production and separate modules for the loading, assembling and packaging of both artillery projectiles and the larger items such as bombs or missile warheads. The initial module (estimated cost \$22.2 million) is planned to include basic utilities (power, water, waste) and the security and safety equipment (fencing, lighting, intrusion alarms) for follow-on construction. The modular design allows phased decision points, so that substantial recovery of equipment costs would be realized in the event, or when, no further modules were necessary. Currently, plans exist for modules for three chemical weapons (155mm GB projectile, the Bigeye VX bomb and the 8-inch VX projectile). Consideration of the multiple rocket launcher warhead has been deferred to a later date. The present cost estimate for the planned modules is \$156 million.

No firm estimates have been made for the production costs of the items which these modules would be capable of producing. It is believed that maintenance and surveillance costs for binary munitions would be substantially reduced since the stringent occupational safety and health requirements would not be required because lethal chemicals would not be stored.

Rescheduling of the construction of the present modules is now under active consideration. It may be possible to construct the first two phases on a concurrent basis. This would provide the capability to produce aerial delivered bombs (Bigeye) early in any subsequent production. The bombs would provide more range and targeting flexibility. Any binary munitions could reduce deployment since they could be stored on board U.S. naval vessels near a potential theater of use.

Alternatives to the construction of a binary munition facility have been and are continuing to be evaluated. They include filling standard munitions with bulk agent from existing stockpiles as well as modifying present stockpile munitions to provide more targeting and delivery flexibility. Present estimates to reopen and modify present filling facilities to meet current environmental and occupational safety and health standards are for Rocky Mountain Arsenal for GB [deleted] and Newport Army Munition Plant for VX [deleted]. These actions, however, do not alleviate the problems associated with handling lethal chemicals nor the long-term problems of safe disposal of obsolete or deteriorating chemical munitions.

Binary weapons are as effective as the present bulk-filled munitions, but they have significant safety advantages in manufacturing, storage, transportation and eventual disposal. Binary munitions would thus eliminate many of the peacetime environmental and public health concerns regarding chemical weapons, since what is to be stored would not be lethal and the large disposal costs are eliminated. A binary weapon is one in which two non-lethal components are

packaged separately and combined to form the standard nerve agents only after launch, that is, while en route to the target.

Present munitions suffer from both degradation and obsolescence. [Deleted.] Binary munitions will overcome all of these disadvantages while providing a safe item to handle in the current complex logistics process in the modern battlefield. They will additionally provide no hazard to our own forces in the logistics operations even should they become a target which is a severe problem with bulk-filled chemical items.

The major operational and technical advantage of binary munitions is that they can be produced in the proper mixture of ground vs. aerial delivery systems and the proper mixture of persistent vs. non-persistent agents to provide the tactical military commander maximum flexibility with modern delivery systems. A major failing of current bulk-filled munitions is the extreme hazard and cost of modification to adapt them to new delivery systems.

The current stockpile would be retained and demilitarization schedules developed to maintain a credible deterrent capability when a binary production decision was made. Replacement with binary munitions is not planned to increase the stockpile; the plans are to provide a usable stockpile compatible with modern delivery systems to insure a credible deterrent to the use of chemicals by others. Detailed cost estimates have not been made for these operations since schedules have not yet been developed.

Improved protective and defensive measures, by themselves, are of questionable adequacy as a deterrent against the use of chemical weapons. Neither do we believe that the possibility of nuclear retaliation to the use of chemical warfare will provide an adequate deterrent. The United States should have a credible chemical response option to Soviet use of chemical weapons. We have not manufactured any chemical agents or munitions since 1969. In the absence of an agreement to ban chemical weapons, we believe that a credible retaliatory capability, combined with the on-going upgrade of our defensive posture, is necessary to provide an adequate deterrent to the use of chemicals by other nations.

Senator LEVIN. Many people claim that unless these chemical weapons, binary or otherwise, are forward deployed in Europe they really have very little deterrent or war-fighting value. Since the Germans are so sensitive about the faintest mention of chemical warfare and the presence of weapons, since reportedly [deleted].

Is there any evidence to support a conclusion the Germans would accept forward deployment of binaries? Why would they accept storage of the stockpile which the JCS says is required? I understand that there are real possibilities that a premature decision on binary facilitization, even only this \$3.15 million in fiscal year 1981 for facilities, could be misconstrued in Europe and result in a repetition of the neutron warhead controversy. The elections in Germany this fall could exacerbate this possibility. If we ultimately decide that we want to produce and deploy binaries, wouldn't it be more prudent to make this facilitization decision in fiscal year 1982, which would give our government time to begin discussions with the allies to prepare them? Is it possible to restructure the present three-phase program being considered to produce binaries to switch the timing of production of artillery shells vice the Bigeye bombs, which we might be in a better position to deploy in Britain earlier because of the receptivity of the Thatcher government? What would be the cost and schedule effects of re-phasing the program in this manner? Wouldn't this be wise to insulate the mainland Europeans from the chemical weapons "fallout" we could expect—especially the Germans, for as long as possible to give us more time to try to convince them to accept forward deployment of binaries? If we make the Pine Bluff facilitization decision in fiscal year 1981, do we preclude switching the production phases to try to forward deploy the bombs in England?

Since some of our allies are so sensitive to chemical weapons that they do not even permit their troops to practice defensive and offensive techniques for them, why should they feel any more comfortable about binary weapons? Does any evidence exist to support the conclusion our Allies would be more willing to accept storage of binary munitions on their soil? There have been concerns stated that a premature decision to proceed with the binaries facilitization will hurt the willingness of some of the Europeans to take part in the theatre nuclear weapons modernization program mainly the Dutch and Belgians. Do you agree with this thesis? If the Soviet chemical threat to Europe is as formidable as some people contend, would it not be necessary to have our NATO allies also obtain offensive chemical weapons, since in any future conflict, U.S. forces would not be stationed along the entire combat area? Has the question of U.S. production of binary munitions been

discussed formally with our NATO allies on high levels and regarding strategic or policy issues? If so, did any consensus arise? If no consensus arose, what were the main problems cited by the Europeans?

ANSWER. It is clear that [deleted]. As part of the Administration's review of the chemical retaliatory modernization question, we are pursuing the questions you have raised. Specifically, we are reviewing such questions as [deleted]. We do believe that the Soviet capability to wage chemical warfare and the greater safety associated with our proposed binary munitions may well [deleted]. Once our review is completed we can provide you with more specific answers to the important questions you have raised.

CHEMICAL WARFARE

Senator LEVIN. Do we have any evidence that the Soviets have produced chemical munitions since the early 1970's? Hasn't almost all of their effort in the past decade been devoted to improving their defensive posture as opposed to their offensive chemical posture?

ANSWER. Senator Levin, we have [deleted].

Senator LEVIN. On what explicit methodology is our estimate of the Soviets chemical munitions stockpile based?

ANSWER. Senator Levin, we have [deleted].

Senator LEVIN. Mr. Secretary, the Executive Branch still is in the process of completing its major study on our chemical warfare capabilities, policies and requirements for the future is it not? The outcome of that study could affect the timing, scope and composition of the binary munitions program—both in terms of construction of facilities as well as production of the weapons themselves, could it not? Could the outcome of this study affect the utility of this \$3.15 million addition some are proposing for fiscal year 1981 for Pine Bluff to facilitate for production of 155 millimeter shells for GB nerve agent? Also, the Army is studying its mobilization and medical evacuation requirements to factor in how its manpower needs and medical resources requirements could be seriously affected by a large number of chemical warfare casualties, is this not so? Considering all these studies underway which could provide information useful to the Executive Branch in formulating its chemical warfare policies and fiscal year 1982 budget request, and to the Congress in evaluating that and future requests, wouldn't it make more sense to wait until fiscal year 1982 to decide on not only this \$3.15 million as well as the other components of the program, Mr. Secretary.

ANSWER. The Administration is, in fact, reviewing all aspects of the chemical warfare question and we expect a decision will be made this fall. [Deleted.]

Senator LEVIN. What was the average daily expenditure rate of conventional artillery shells during World War II, Korea, and Vietnam, for U.S. Forces (in terms of tons and numbers of shells)?

ANSWER. The information requested is not available. The following related information addressing the area involved may be helpful.

The total tonnage of artillery ammunition expended by U.S. Forces in Europe during World War II amounted to 1,446,400 shells.

In Korea (1950-53) total ground fire expenditures (small arms through howitzers) amounted to 2,111,000 tons.

An interesting comparison between a battle in World War II and Korea is as follows:

In Korea, during the battle of Soyang, 21 battalions in 7 days (17-23 May 1951) fired 309,958 rounds or more than 9,730 tons. This, compared with 94,230 rounds that 35 battalions fired in support of the attack against Bastonge during 10 days (22-21 December 1944) in World War II.

Ground fire expenditures in Vietnam were as follows:

Fiscal year 1967 monthly average—73.3 tons (in thousands).

Fiscal year 1968 monthly average—116.7 tons (in thousands).

Fiscal year 1969 monthly average—110.8 tons (in thousands).

Fiscal year 1970 monthly average—106.3 tons (in thousands).

Fiscal year 1971 monthly average—69.2 tons (in thousands).

Fiscal year 1972 monthly average—59.3 tons (in thousands).

Average daily requirements per weapon as used by the U.S. Army for planning are attached. (Retained in committee files.)

UNITED STATES SOVIET EXPECTED DAILY EXPENDITURE RATE FOR CONVENTIONAL
ARTILLERY

Senator LEVIN. [Deleted.]

ANSWER. [Deleted.]

Senator LEVIN. I also understand that DOD and the JCS are independently pursuing further studies which could affect our chemical munitions program. For example, the JCS-sponsored study by the Institute for Defense Analysis—the major study which the JCS is using to validate and support its stockpile requirement—will not be finished before October at the earliest and probably will not be completed before the end of the year, is this not true? What is expected daily expenditure rate for chemical weapons for US and Soviet forces in a future NATO conflict? On what methodology is this figure based in each case? What is the daily expenditure rate for chemical weapons in a NATO war required just to disrupt the Soviet/Warsaw Pact's tempo of critical operations? What is the daily expenditure rate for chemical weapons required just to keep the Soviet/Warsaw Pact troops in an "all-buttoned up" chemical warfare defensive posture? Provide the methodology on which the answers are based.

ANSWER. It is true that the JCS contracted study will not be finished before October at the earliest. The study has been divided into three parts. Part I, which has been completed and JCS approved, was the development of the data base in which to conduct Part II and then updated to support Part III. Part II is the development of US/NATO 1979-80 force level capabilities to withstand a Soviet/Warsaw Pact conventional, chemical and nuclear attack with current protection, and to determine what chemical munition requirements are necessary to halt the enemies advance and to restore the border. The OJCS will formally seek JCS approval of Part II in the October-November 1980 time frame. Draft copies of Part II have been sent to the Services and USAREUR, and comments have been included in the final draft. Part III is similar to Part II, but the data base has been updated to contain [deleted].

The OJCS will again seek JCS approval of Part III, which is expected to be in the December 1980—January 1981 time frame.

Using the methodology of the TACWAR model, the Institute of Defense Analysis has developed [deleted].

Senator LEVIN. What do Soviet operational practices and tactical doctrine require Soviet soldiers to do regarding defensive chemical warfare tactics (don mask, gloves, stay in vehicle, etc.) when a chemical attack has been detected? For how long are they required to accomplish these defensive CW tasks? What is considered to be the level of CW attack required, under Soviet doctrine and tactics, to force Soviet troops into an "all-buttoned up" chemical defensive posture?

ANSWER. [Deleted] that the standards of proficiency in use of CBR protective masks and clothing are: [deleted]. Soviet attention to protective training has been focused on [deleted] available does not indicate how [deleted]. Due to the lethality of nerve agents, [deleted].

Agent GB, being a non-persistent agent, would not have lasting effects in an area. VX, being a persistent, would require [deleted].

Senator LEVIN. How many civilian casualties would we expect to a protracted chemical campaign in Europe? How many civilian deaths? How many military casualties and deaths would we expect in such a campaign, and in the campaigns hypothesized in arriving at the JCS chemical stockpile requirement? On what evidence/methodology are the answers to Questions 33 and 34 based?

ANSWER. The JCS contracted study, using the TACWAR model methodology is [deleted].

Senator LEVIN. What are the US command arrangements for authorizing release of chemical weapons? The NATO command arrangements? What are the Soviet command arrangements for authorizing release of chemical weapons? The Warsaw Pact command arrangements? I have been informed that procedures required to gain NATO approval for using chemical munitions are potentially time consuming. Is this true and how long would be required from the beginning of the process to seek such approval until the first chemical munition could be fired?

ANSWER. [Deleted.]

Senator LEVIN. What are the offensive and defensive chemical warfare capabilities of each of the non-Soviet Warsaw Pact armed forces? On what is this evidence based? Do any of the armed forces possess chemical weapons of their own? Do any store Soviet chemical weapons, or do the Soviets store any such weapons in any of these nations? Does the Soviet Union provide any of them chemical weapons for the offensive use, and why or why not?

Answer: Senator Levin, with regard to the offensive capabilities of each of the non-Soviet Warsaw Pact forces, it is our estimate based on [deleted].

Senator, the defensive warfare capability, or more appropriately the capability of all of the Warsaw Pact forces to survive in a toxic environment [deleted].

Senator LEVIN. How long a chemical war can non-Sov. WP forces protect against? Any improvement programs expected? What and when?

ANSWER. Senator Levin, when on surveys [deleted].

Senator LEVIN. How much do we estimate being in a CW defensive posture would slow Soviet wartime operations tempo? How much would our operations tempo be slowed? What is the basis for these estimates? How long could both sides remain in an "all-buttoned-up" CW defensive posture and fight effectively? What is the expected percentage degradation in effectiveness on the U.S. and on the Soviets caused by CW defensive measures imposed on personnel engaged in the following operations:

- (a) ground troops on foot or mechanized infantry dismounted.
- (b) tankers.
- (c) field artillery crewmen at their batteries; air defense crews at their batteries.
- (d) tactical aircraft pilots.
- (e) tactical aircraft maintenance and turn-around crews.
- (f) logistical personnel loading at rear depots and in forward areas; truck drivers transporting materiel/supplies between rear and forward areas.
- (g) "Host Nation Support" personnel at debarkation ports and operating in rear logistic areas.

On what methodology or evidence is each estimate based? Will these percentages change in the future as U.S. defensive capabilities improve? What will they be in fiscal year 1985 and fiscal year 1990? How long a chemical war are U.S. forces required to be able to protect against, using defensive equipment? On what is this estimate based? How long a chemical war can our Allies presently protect against? Please provide a break-down by country. What are the plans to improve these capabilities, and when will they be accomplished?

ANSWER. The wearing of CW protective equipment can reduce the efficiency of the individual. U.S. doctrine for human performance in full protection is that at [deleted]. Varying periods of work/rest are prescribed as a function of temperature. At the higher temperature of [deleted]. These individual standards can be determined by physical measurement much more readily than [deleted]. The performance is not only a matter of the [deleted] under actual or simulated conditions. It is reasonable to expect, however, that [deleted].

Training, adequacy of protective and decontamination equipment, and the [deleted] envision substantial assistance to be rendered to our [deleted] personnel acting as drivers, laborers, post operators, etc. Provision for individual [deleted] personnel must be made. At present [deleted].

The DOD Consolidated Guidance establishes the basis for how long U.S. forces are required to protect themselves in a chemical warfare environment. This guidance [deleted]. The U.S. programs, if [deleted].

Senator LEVIN. I have been informed that even after approval, a quick retaliation may not be possible because logistic plans for moving the munitions to using units are incomplete. Is this true? How long would be required to start retaliation in kind to a Soviet/WP chemical attack? During this time, would U.S. forces be at a disadvantage, and in what ways? What are the requirements for airlift and sealift to transport our present chemical stockpile to Europe in a NATO war—in terms of time and required platforms? What would be the requirements for the contemplated binary stockpile? What are the requirements for both types of munitions stockpiles to be transported from rear areas to forward depots, and from forward depots to user units? If chemical weapons stockpiles in the U.S. are required to be transported overseas during the first 30-40 days of a NATO war, will this require displacement of personnel and other equipment either airlift or sealift dedicated for this latter use under present delivery priorities?

ANSWER. U.S. Army Europe, who has the responsibility for [deleted] has developed and exercised procedures on the [deleted]. Plans estimate the following [deleted].

Time factors for resupply from [deleted].

The Unified Commanders have been tasked to prepare a separate [deleted]. These plans will allow detailed air flow or sea flow plans to be prepared by Military Airlift and Sealift Commands. [Deleted] would be considerably less. For example, [deleted].

The time required to [deleted].

The airlift and sealift requirements [deleted].

Senator LEVIN. Which NATO nations prohibit troops from training in either CW defensive or offensive operations and why? General Bernard Rogers, NATO CINC and USEUR CINC has urged that the U.S. enhance its offensive chemical warfare capabilities. What SHAPE or NATO studies exist to support his recommendations?

ANSWER. All NATO nations conduct training in [deleted]. All of the countries are [deleted].

Due to the [deleted].

Senator LEVIN. If building a 25,000-30,000 agent ton stockpile is decided against or is not feasible, are there lesser stockpile goals which make military sense? How many days of chemical warfare could our present forward-deployed stockpile in West Germany support, and on what is this estimate based? Why won't the stockpile of about 7,000 agent tons in usable munitions we expect will be available in the mid-1980's according to Army data be sufficient for such in-kind, "selective" retaliation or such "limited scale: retaliation"? During the hearing, you expressed some lack of faith in the "firmness" of the calculations resulting in the JCS estimate of needing 19,000 tons of chemical agents to stop a Soviet attack in Europe. What is your estimate of the stockpile needed to respond in-kind to "selective" Soviet strikes or on the "limited scale" embodied in NATO doctrine?

ANSWER. There are some [deleted]. Additionally, the weight of [deleted]. The initial computer runs look encouraging from a [deleted].

In the mid-1980's, it is expected that the [deleted] considering an active maintenance program. [Deleted.]

The JCS is developing a [deleted]. This level can be made available [deleted].

Senator HART. The hearing is adjourned.

[Whereupon, at 11:45 a.m., the hearing was adjourned.]



