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CARBONYL CHLORIDE DISPOSAL DOCUMENTS

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HEARING

BEFORE THE

SUBCOMMITTEE ON NATIONAL STOCKPILE
AND NAVAL PETROLEUM RESERVES

OF THE

COMMITTEE ON ARMED SERVICES

UNITED STATES SENATE

NINETY-FOURTH CONGRESS

FIRST SESSION

ON

S. 2423

TO AUTHORIZE THE SALE AND SHIPMENT INCIDENT TO
SUCH SALE OF THE CHEMICAL SUBSTANCE CARBONYL
CHLORIDE BY THE DEPARTMENT OF DEFENSE

COMMERCE CITY, COLORADO

NOVEMBER 24, 1975



Printed for the use of the Committee on Armed Forces

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WASHINGTON : 1976

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CARBONYL CHLORIDE DISPOSAL

MONDAY, NOVEMBER 24, 1975

U.S. SENATE,
SUBCOMMITTEE ON NATIONAL STOCKPILE
AND NAVAL PETROLEUM RESERVES OF THE
COMMITTEE ON ARMED SERVICES,
Commerce City, Colo.

The subcommittee met, pursuant to notice, in the City Council Chambers, Commerce City, Colorado, Hon. Gary Hart, presiding.

Present: Senator Gary Hart.

Also present: James C. Smith II, professional staff member; and Dr. Ed Miller, assistant to Senator Hart.

OPENING STATEMENT BY SENATOR GARY HART

Senator HART. We will call this morning's hearing to order and welcome all of you who have come out to participate or listen to this hearing. The purpose of our hearing this morning is to consider Senate Bill 2423, a bill requested by the Department of Defense which would allow the Army to sell to commercial users its remaining stock of carbonyl chloride, an obsolete chemical warfare agent known as phosgene. Other than a ton of this material elsewhere, all of it, which constitutes 1,294 tons, is now stored at the Rocky Mountain Arsenal.

Present law prohibits the Army from moving any chemical warfare agents unless the Secretary of Defense finds it necessary in the interests of national security. Obviously, this certification cannot be made in respect to phosgene gas, which has no military utility.

In 1969, nearly 4,000 tons of carbonyl chloride were sold by the Army and shipped from the arsenal to commercial buyers. This movement of the lethal chemical was made under an exemption to normal safety regulations as set down by the Department of Transportation. Primarily because of public protest, the Department of Transportation withdrew its special permits, and the Army had to cancel plans for disposing of the 1,294 tons which now remain at Rocky Mountain Arsenal. In fact, the hazard posed to the public health and safety by the 1969 gas sales and movements is why the restrictive laws were passed by the Congress. These laws are the reason for the hearing today. Without the exemption proposed by S. 2423, the Army would be unable to dispose of the phosgene gas through commercial sale.

S. 2423 has been referred to the Armed Services Committee for consideration. The Chairman of that Committee has asked the Subcommittee on National Stockpile and Naval Petroleum Reserves to conduct hearings. Because of the special interest to the Denver area of this:

legislation, it was decided to hold the hearings here today, and I have been designated by the Chairman to chair these hearings.

Ten days ago I publicly announced that these hearings would be held and that public comment was requested. Furthermore, my office directly contacted State and local municipal and other public officials inviting them to testify on the bill. I am pleased that several have accepted the invitation and will be heard here today.

There is no disagreement that I know of to the premise that the phosgene gas should be removed from the arsenal. The Army wants to dispose of it and so do the citizens of Colorado. Furthermore, expansion of Stapleton International Airport would seem to require that these potentially dangerous chemicals be removed as soon as possible.

The Army has two possible ways to dispose of the carbonyl chloride. It can set up a facility to transform the chemical into a less hazardous substance or it can sell it after some processing to commercial firms which use it for the manufacture of plastics and other products. The Army has chosen the second alternative on the grounds that this method is less expensive to the Government and it can be done more rapidly. Today we shall inquire into these cost and time estimates, but our main concern should be that, whatever disposal method is chosen, maximum attention be paid to the public health and safety.

Before we hear our first witness, I will note that a bill identical to the one that we are considering here today was passed by the House of Representatives on November 17 of this year. Therefore, if this subcommittee, the full Armed Services Committee and the Senate act favorably, the measure will become effective when the President signs the bill and the Army would be able to begin disposal actions of this gas forthwith.

[The bill S. 2423, follows:]

[S. 2423, 94th Cong., 1st sess.]

A BILL To authorize the sale and shipment incident to such sale of the chemical substance carbonyl chloride by the Department of Defense

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. The Secretary of Defense is authorized to dispose of the entire inventory of the chemical substance carbonyl chloride under his jurisdiction by sale within the United States of the carbonyl chloride or of any commercially available derivative thereof.

SEC. 2. Nothing contained in section 409 of Public Law 91-121, as amended, or in section 506 of Public Law 91-441, shall be deemed to restrict any sale authorized by section 1 hereof, or any transportation incident to such sale.

I will note the presence, for the record, of Dr. Ed Miller of my staff, and Mr. James Smith of the Senate Armed Services Committee staff, who are with us here today. There will be formal statements, both read for the record, summarized, and just introduced into the record. I will be asking a number of questions of the military witnesses and others, but I hope that everyone here understands that time will be given on a 10-minute-per-witness basis, for any statements that anyone wishes to make.

I want to welcome Mr. Edwin Greiner, Deputy Assistant Secretary of the Army, and he is joined by Brig. Gen. Sam Bass. We're pleased to have them and other representatives of both the arsenal and the Department of Defense with us. Mr. Greiner, we'll begin with you.

**STATEMENT OF EDWIN GREINER, DEPUTY ASSISTANT SECRETARY
OF THE ARMY; ACCOMPANIED BY BRIG. GEN. SAM BASS**

Mr. GREINER. Thank you, sir. First, I'd like to express my appreciation for this opportunity to state the Army's views regarding S. 2423 which would authorize the sale of the Army's stockpile of phosgene located at the Rocky Mountain Arsenal.

The Army stores and maintains the Department of Defense deterrent stockpile of chemical warfare munitions at widespread locations. Included in the stocks at Rocky Mountain Arsenal, here in Denver, Colo., but no longer required as part of the deterrent stockpile, is about 2 million pounds of phosgene, commonly known in the chemical industry as carbonyl chloride.

On June 8, 1970, the Department of Defense approved an Army request to detoxify the chemical stockpile at Rocky Mountain Arsenal to include all GB agent munitions, bulk mustard, and phosgene.

Prior to 1969 the disposal of this type of material varied in many respects. Transportation to the disposition locations was made under the provisions of the Interstate Commerce Commission and Office of Safety and Health Administration issuances. The enactment of Public Laws 91-121 and 91-441 placed severe restrictions on the removal and disposal of chemical warfare agents. Under the provisions of these public laws the Army has had to retain chemicals which require disposal at the various storage locations, and disposal has had to be planned for accomplishment.

The program to detoxify all GB agent munitions located at the Rocky Mountain Arsenal was initiated in October 1973. We are on schedule toward a target completion date of December 1977. The bulk mustard disposal was completed in March 1974 at a cost of \$15.2 million.

The other remaining agent to be disposed of is the phosgene. The capability exists to detoxify this material by reducing the phosgene to nontoxic chemicals for further disposition. However, such detoxification would require the establishment of costly equipment lines and the expense of considerable manpower. We estimate that between \$7 and \$9 million would be required to reduce the carbonyl chloride to its nontoxic chemical components. An alternative to the detoxification is outright sale of the chemical to a commercial organization. Phosgene is a chemical widely used in the manufacture of polyurethane plastics. We have received several inquiries as to the availability of the phosgene by commercial contractors. With the enactment of the legislation before this committee, the Army would be permitted to transport and sell to the public an industrial chemical routinely transported throughout the Nation.

The process for sale of carbonyl chloride requires transfer of the material into containers suitable for shipping hazardous materials. Safety criteria applied to the actual transfer operations are equal and generally exceed current industrial practices for handling carbonyl chloride. The transfer operation would be accomplished utilizing, with some modification, available facilities at Rocky Mountain Arsenal. Transportation incident to transfer and sale would comply with the applicable standards of the Department of Transportation

for commercial shipment of carbonyl chloride. The carbonyl chloride would be shipped in fully approved DOT specification shipping containers and the shipments would require no waivers of DOT standards. The proposed action would not expose the public to any greater risk of injury than that to which it is routinely exposed incident to chemical shipment and use of carbonyl chloride. Department of Transportation experience with this type shipment has been exemplary.

An environmental assessment of the transfer operation incident to sale has been prepared by the Department of the Army. This assessment concluded that the proposed sale transfer operations would not significantly affect the quality of the human environment. An environmental impact statement is in preparation.

We estimate that sale of the phosgene rather than disposal by detoxification would result in a savings to the taxpayer of \$3½ to \$4 million.

Early enactment of the legislation permitting sale of carbonyl chloride is essential to early and economic disposal of the remaining chemical material at Rocky Mountain Arsenal.

Senator HART. Thank you very much, Mr. Greiner. General Bass do you have any prepared remarks?

General BASS. No; I do not, sir.

Senator HART. Before asking a few questions of both you gentlemen, let me make a couple of observations.

First of all, I want to thank the officials of Commerce City for making this part of the municipal building available to us this morning for these hearings. We greatly appreciate their cooperation and assistance. And I also want to note that the record of these hearings will be held open for one week to permit questions which are propounded and cannot be answered immediately or require written answers to be added to the record. Information for the record should be provided to my office in Denver or Washington within one week from today. Mr. Greiner. I want to thank you and General Bass and those with you for coming out today and offering your statement. I would like to ask several questions of you and if you aren't prepared now to answer them, you can, of course, add the answers later.

Can you tell us what the physical and chemical characteristics of carbonyl chloride are?

Mr. GREINER. I will have to defer to General Bass on that one.

General BASS. Just a minute, sir. Well, carbonyl chloride, sir, is a chemical compound. Its physiological effect that it produces on man—it is a lethal compound taken in enough quantities. It produces an effect, it attacks the lung and it builds up moisture or fluid within the lung and you die of a lack of oxygen, much like you would in a case of pneumonia. Now, it has a—I do not know whether you want to get into the technical characteristics—but it evaporates rather rapidly, as opposed to staying around as a pool of liquid, and as a result, when it is stored in ton containers, it is under pressure.

Senator HART. I see. It is in liquid form as it is presently stored?

General BASS. It is in liquid form. It is not a gas as we deal with it, although, if unconfined, it will vaporize rapidly.

[Supplemental information follows:]

Carbonyl chloride may injure unprotected man chiefly in the respiratory tract. It exerts its effect primarily in the lungs and results in damage to the capillaries.

Carbonyl chloride causes seepage of the watery fluid into the air sacs. When a lethal amount of carbonyl chloride is received, the air sacs become so flooded that air is excluded and the victim dies of annoxia (oxygen deficiency). If the amount of carbonyl chloride is less than lethal and proper care is provided, the watery fluid is reabsorbed, the air cell walls heal, and the patient recovers. The severity of poisoning cannot be estimated from the immediate symptoms, since the full effect is not usually apparent until three or four hours after exposure. Most deaths occur within 24 hours. The median lethal dosage of carbonyl chloride is 3,200 mg-min/m³.

Senator HART. I see. Are the figures which I used in my opening statement about the quantities stored at the arsenal correct as far as you are able to tell? I used the figure 1,294 tons.

General BASS. It is correct, sir.

Senator HART. Are there stockpiles of this compound anywhere else besides at the arsenal?

General BASS. Yes, sir, there is a one-ton container filled with approximately 800 pounds of phosgene located at Dugway Proving Ground, Utah, but that is used strictly for research purposes. We challenge—for example—filters out there, test their usefulness.

Mr. GREINER. It is not a stockpile in the same context, as it is used out there.

General BASS. It is not a stockpile.

Senator HART. It is for experimental purposes?

General BASS. That is right.

Senator HART. Could you give us an idea of what the commercial uses of this compound are?

Mr. GREINER. Well, it is widely used in industry in the manufacture of plastics, urethane resins, polyurethane foams, specialty rubbers, outside coating, such as paints, pesticides—a wide variety of commercial products.

Senator HART. And do you have any figures or statistics on how much of this compound is produced annually for commercial purposes?

Mr. GREINER. Yes, we understand that more than 1.4 billion pounds per year are produced and used commercially.

Senator HART. And, according to your statement, it is correct to say that this commercially produced carbonyl chloride is commonly transported around the country?

Mr. GREINER. That is correct. There are, incidentally, 18 producers and it is routinely moved throughout the country.

Senator HART. In what manner? By rail and on the highways? As far as you know?

Mr. GREINER. Yes. I believe it is primarily by highway.

Senator HART. I see. For what purpose—and this may have been touched upon in your prepared remarks—did the Department of the Army acquire a stockpile of carbonyl chloride in the past?

Mr. GREINER. Well, as General Bass indicated, this is a lethal chemical and it was part of the Nation's total chemical stockpile and I guess it is commonly understood that the United States Armed Forces have maintained such a stockpile as a deterrent to the use of lethal chemicals by any potential aggressor.

Senator HART. To your knowledge, do any of the other services or branches of the Defense Department—particularly the Navy or the Air Force—have any phosgene?

Mr. GREINER. I believe they do not.

General BASS. The best information available to us indicates that they do not.

Senator HART. If you could find out for sure and provide that information for the record, I think it would be helpful.

Mr. GREINER. All right, sir.

General BASS. Yes, sir.

[The information follows:]

To my knowledge none of the other services (Navy, Air Force) or branches of the Defense Department have any phosgene.

Senator HART. Does the phosgene gas, to your knowledge, change characteristics with age?

General BASS. To the best of our knowledge, it does not over a reasonable time frame. For example, when the phosgene was produced, back in the early 1950's, it had a purity of about 98 percent. Currently, some 25 years later, it has a purity of 90 percent. So it takes a great deal of time for it to degrade.

Senator HART. I take it from what you have said that it does, over a period of time, become somewhat less toxic?

General BASS. I would have to search out the information on that. I don't know whether the degradation products are less toxic than the phosgene itself.

Senator HART. I see.

General BASS. Sometimes you degrade into products that could even be more toxic. I do not know if that is the case here, sir. I can check that and provide it for the record.

[The information follows:]

The purity of the carbonyl chloride in storage at RMA has remained virtually unchanged since the time the containers were filled. In 1966, 168 storage containers were sampled to determine carbonyl chloride purity. In March 1975, 11 of the same containers were again sampled. The average purity of the carbonyl chloride has remained at approximately 98.75. Decomposition of carbonyl chloride in storage may occur primarily as a result of possible contamination with water. The decomposition products would be carbon dioxide and chloride ion. It is expected that the toxicity of the material would remain essentially unchanged as a result of age. Decomposition of the carbonyl chloride at RMA has been minimal.

Senator HART. Are there any other military uses for the material within the Department of Defense that you know of, besides the uses that you have mentioned?

Mr. GREINER. I am not aware of any.

General BASS. The only use right at the moment is for testing filters, and that is in a research mode.

Senator HART. But no other military use?

General BASS. No.

Mr. GREINER. No.

Senator HART. Secretary Greiner, you mentioned the environmental impact statement. Do you have any idea when that will be completed?

General BASS. We'll finish it during December and make it available to the Department of the Army—I'm talking organizationally now—in January.

Senator HART. I see. You also mentioned, Mr. Greiner, in your prepared remarks that there would be a savings to the taxpayers of \$31½

to \$4 million. Does that calculate in what will be received from the sale to the commercial users?

Mr. GREINER. Yes.

Senator HART. Plus the savings over pursuing the other alternative—detoxification?

Mr. GREINER. That's correct. Detoxification is a very expensive operation. There is a considerable savings involved in sale.

Senator HART. Just so the record is clear on this subject, why, specifically, does the Army now wish to dispose of the carbonyl chloride?

Mr. GREINER. Well, it's not "now." It has been many years that we have desired to dispose of it. We were held up as a result of the legislation which precluded our moving it out. In fact, there was a sale in 1967 which had to be canceled as a result of the legislation and the withdrawal of the permit for moving it. So, for at least that long, we have desired an opportunity to eliminate it from our stockpile.

Senator HART. So you have been—it's not something that has come up in recent weeks or months? You've been making this effort over a number of years?

Mr. GREINER. That's correct.

Senator HART. Is there any unique reason which we have not discussed why an expeditious disposal of the compound is particularly important at this time?

Mr. GREINER. Well, to the extent that the community is concerned about the location of such stocks in a metropolitan area and close to the airport, sale would permit movement of it from the Arsenal at least 12 months earlier than would otherwise be the case.

Senator HART. Legislation of the type we're considering here today has been needed since 1970, when the Department essentially made the decision to get rid of the phosgene. It's my understanding that over \$2 million has been already put into the program to detoxify the phosgene. Has the Defense Department previously pursued the legislation that we are discussing here today, and, if not, why not?

Mr. GREINER. Well, there was a period when the phosgene was earmarked for use in the manufacture of a propellant by the Air Force and any action was suspended in anticipation of the Air Force requirement for it. That subsequently did not prove out, so the action to get rid of the phosgene was then reactivated.

Senator HART. And could you give me some dates in connection with that?

Mr. GREINER. Well, the transfer to the Air Force was in the July 1974 to February 1975 period. Prior to that, we had initiated a detoxification program. The Air Force then discovered that the commercial facility which intended to use the carbonyl chloride in a manufacturing process was unable to achieve the quality that was anticipated, so that terminated and we then started the disposal program again; hopefully, through sale.

Senator HART. What is the current status of the disposal plans for detoxification?

Mr. GREINER. Well, we have been planning ever since the phosgene became excess to us and we haven't suspended them totally, but we would hope to save a large amount of money through sale rather than detoxification. There are many technical problems that we have had to

cope with. General Bass can elaborate on them. It's not a simple matter.

General BASS. Sir, if I can elaborate just a moment. When you speak of "plan," we normally think in terms of a document that by public law must be concurred in by the Secretary of the Department of Health, Education, and Welfare. We have spent a lot of effort doing the engineering design and coming up with the methodology to detoxify phosgene by several options. We have not written the plan, as such, to accomplish this. When we got to the point that we thought we might begin writing the plan, that the system was fixed sufficiently in our minds, then, as Mr. Greiner pointed out, we had the option—the alternative—of furnishing this to the Air Force for conversion into a propellant, and at that time we ceased work on the detoxification option for the most part and concentrated on this other urgent requirement. So, as a written plan goes, it has not been written. The data are there upon which to write it.

Senator HART. What would be the time requirements for disposal of the compound by detoxification if that route were selected?

Mr. GREINER. Approximately 24 months.

Senator HART. How would that compare—or give some concurrent estimates of time with other detoxification programs going on at the Arsenal?

General BASS. Well, each detoxification program seems to be a special case in itself because they present unique problems, but if we go to the program to dispose of mustard agent, which has been completed—that was completed in 1974 and we began the design of the system in the fall of '69—so you're talking of 4 to 5 years there. In the case of the M-34 nerve agent fill munition which we are essentially in the middle of disposing of operationally now—that also began in 1969. Our current schedules call for completion in late 1977. Other programs that we have had out at Rocky Mountain Arsenal have taken as little as a year to 14 months. It depends upon the item.

Senator HART. I see. How many detoxification programs are going forward out there now?

Gen. BASS. We have completed three, and we have four to go.

Senator HART. That means four under way now?

General BASS. Well, under way in one form or another—either in engineering or in operations.

Senator HART. Give us an idea of what the estimated cost of construction and building—well, just what would it cost, in sum, to pursue the detoxification alternative?

Mr. GREINER. Well, a total of about \$10 million, with part of it already expended, and an additional \$2 million or so just in the plant—the physical plant set-up that would be required—and then an operations cost of \$5.8 million. It's a very expensive process to operate, as well as to create the physical facility for that purpose.

Senator HART. And, just so I'm clear on the history of it, money has been expended?

Mr. GREINER. Oh, yes. We were doing some engineering pilot studies, engineering designs; some small amounts of money were spent for equipment items. So that's already a sunk cost—about \$2 million all told has gone into preparation.

Senator HART. I used that figure in one of my questions and I just wanted to be sure that that was accurate.

Mr. GREINER. That is correct.

Senator HART. In continuing to pursue this line of questioning with regard to alternatives, I take it its your testimony that, as far as you know, the Air Force would not have any substantial use for this compound now?

Mr. GREINER. The Air Force has no requirement for it now.

Senator HART. Do you have your own shipping containers for moving the phosgene? Or how would that be handled?

Mr. GREINER. We have shipping containers which would be used and they are identical to the containers that commercial movers use.

Senator HART. Do those have to meet certain Transportation Department specifications?

Mr. GREINER. Yes, and they do.

Senator HART. And they do?

Mr. GREINER. Yes.

Senator HART. You wouldn't have to modify these?

Mr. GREINER. That's correct.

General BASS. May I elaborate on this, sir? We are taking ton containers that currently do not meet Department of Transportation specifications, but we are going to modify them to meet the Department of Transportation specifications and, when shipped, they will satisfy all requirements.

Senator HART. I see.

Mr. GREINER. In the past, we did move under waivers, but we would not be requiring waivers at this time.

Senator HART. Mr. Smith informs me that the Department of Transportation's position is that additional tests will be required on these containers after they are modified, and that the gas cannot be moved until—unless and until—those containers meet the specifications? Is that your understanding?

Mr. GREINER. Yes, and our plan requires us to pass all those tests before we would make any movements.

Senator HART. And you're—I take it—sufficiently confident that you can meet those specifications?

Mr. GREINER. Yes.

General BASS. If I could elaborate on that one point? It involves a number of tests, one of which is a hydrostatic testing, to 500 pounds per square inch. The equipment to accomplish this has been certified by the Association of American Railroads, which is an advisory group to the Department of Transportation. There are other tests that have to be performed on what we call "bonnets" or covers that are placed over the valves on the end of the ton containers—and they have to meet certain requirements. The manufacturers of these metal parts, the fabricators, their procedures also have been certified to by this same group of the Department of Transportation.

Senator HART. What calculations have you made, in case these containers cannot be modified, in terms of additional cost?

General BASS. The cost of a new ton container is approximately \$1200 each, but, aside from cost, it's time. Our last quote from industry was that there was a lead time of two years before we could obtain them. They are in very short supply and the demand is great, which is one of the reasons that we should not have any trouble finding buyers for the containers.

Senator HART. But you don't know, if the present containers cannot be satisfactorily modified, what it would cost to obtain those?

General BASS. The cost to buy new ton containers is \$1200 each, and two years.

Senator HART. And you would need how many?

General BASS. At the moment we would need 300.

Senator HART. What procedures would you use for disposal, commercially, of the gas, presuming all the other problems can be met? Would it be an open bid procedure? Or how will that be handled?

General BASS. If I understand your question, sir, is it how will industry commercially dispose of the gas?

Senator HART. No, what procedures will you use to dispose of it?

General BASS. Dispose of it?

Senator HART. What bidding procedures?

General BASS. Oh, this will be done through the Defense Supply Agency—an invitation to bid and elicit bids from industry, evaluate those bids and award to the one that would tend to result in the greatest return for the Government.

Senator HART. It's our understanding that you already have some kind of contact with potential purchasers. Is that correct?

General BASS. Yes sir, informal.

Senator HART. Informal—and is there any doubt in your mind that there is a commercial demand for the gas?

General BASS. We have been approached by three separate corporations who are definitely interested.

Senator HART. I see. With regard to the problem of liability in the case of accident, have you gone so far as to consider the legal question of when—if a sale is consummated—title to the product will change hands, of whether it will be at the arsenal or at the other end of the transportation? The question obviously being, who is going to be liable or responsible in case of accidents en route?

Mr. GREINER. Well, my expectation would be that title would transfer at the arsenal and that the movement would be by commercial shipper under the applicable laws and regulations and the movement would be no different than any other commercial movement.

Senator HART. But this is an item that you think would be negotiated in the contract of sale?

Mr. GREINER. If it became a matter for negotiation, yes.

Senator HART. Normally, you would request that title transfer at the arsenal?

Mr. GREINER. That's correct. I would expect that the DSA solicitation would so indicate.

Senator HART. Would this legislation have any effect on future disposal plans for chemical warfare agents other than the phosgene?

General BASS. Absolutely not.

Mr. GREINER. I don't think so.

General BASS. The legislation pertains solely to phosgene.

Mr. GREINER. Right.

Senator HART. Will this legislation exempt in any way the Department of the Army from complying with Department of Transportation regulations for shipment of carbonyl chloride?

Mr. GREINER. No.

Senator HART. Would you have any comment on the effect of this method of disposal, sale and transportation on any operations at the Denver airport?

Mr. GREINER. Well, to the extent that we can remove the carbonyl chloride from close proximity to the airport, it would increase the confidence in having accident-free operation at the airport, but the sale by itself would have no effect on operations. There would be no reason to impact on the operation of the airport.

Senator HART. How is the compound presently stored? Is it above ground, or below ground, or where? In what circumstances?

General BASS. It's above ground. It's stored in ton containers in a toxic storage yard which is a controlled-access area. I would have to get an accurate estimate, but I would believe it's about 3 miles, or 4 miles, from the runway, at almost a 90° angle from the straight center line of the runway.

Senator HART. In what proximity to the main facilities of the arsenal? Nearby? Or separate?

General BASS. It's approximately—the storage area is approximately a mile and a half to 2 miles from the administrative area.

Senator HART. I see. In which direction?

General BASS. Going west, it's—just a minute—let me look at a map, sir.

It's going essentially on the west, and it's about a mile and a half. I'm sorry—correction—it's 2 miles about—

Senator HART. Two miles?

General BASS. And it's going essentially west.

Senator HART. I see. What would happen to the proceeds from the sale of phosgene?

Mr. GREINER. The proceeds of the sale by DSA are deposited to the miscellaneous receipts of the Treasury. They also are used in the disposal program generally to pay for the cost of disposal.

Senator HART. Do you contemplate any market for the gas among foreign nations?

Mr. GREINER. No.

Senator HART. No possibility of foreign sales? Any requests by any foreign nation?

Mr. GREINER. Not that I'm aware of.

Senator HART. What would be your position if you received such a request?

Mr. GREINER. Well, I guess the State Department would rule on whether or not an export license was appropriate, as they would in any sale of carbonyl chloride.

Senator HART. Would there be any strategic implications, as far as you know, of sale—presuming State had no objections?

Mr. GREINER. I would hazard a guess that carbonyl chloride is used throughout the world in commercial operations. I don't know that a foreign customer would even be interested in transporting it from the United States.

Senator HART. What about a foreign military establishment, for use in military purposes?

Mr. GREINER. I doubt seriously that such a request would be entertained.

Senator HART. If you later want to amplify on that, you may, for the record.

[The information follows:]

Carbonyl chloride is not specifically listed as a restricted item under Title 22 of Code of Federal Regulations parts 121-128, "International Traffic and Arms Regulations," Department of State, November 1973. However, foreign sales would be accomplished only with specific authority from the Department of State. In view of the planned shipping restrictions and economies involved, it is considered unlikely that sale would result in shipment to a foreign military establishment or foreign based company.

Senator HART. Could you describe what contacts you have already had with the Department of Transportation on the sale and transportation of this product?

Mr. GREINER. There has been a long series of contacts, both oral and in writing, over the years on the movement, transportation and sale, and they are continuing.

Senator HART. Could you state DOT's position on the matter?

Mr. GREINER. Well, DOT's position is that as long as we comply with the applicable rules, they have no objection to the sale or movement.

General BASS. May I elaborate just a moment, sir, because it is important. The Department of Transportation points out that phosgene, or carbonyl chloride, is manufactured by many chemical companies at many locations, and no person has been killed or injured due to the rail shipment or other transportation, and that the phosgene in the ton container—the item which we will ship it in—is just one of a number of useful toxic chemicals that are shipped in this configuration around the United States and they feel that—they point out that—to forbid the transportation of that material by ruling out the ton container in which it's shipped would not be in the public interest. Examples of other materials that are shipped are hydrocyanic acid, chloropicrin, cyanogen, nitrogen tetroxide, anhydrous ammonia—just to name a few. There is a wide range; it is a commercial container used to ship hazardous liquids.

Senator HART. If you have any additional information in writing on the Department of Transportation's position, you can also submit that at a later time. The same set of questions with regard to the environmental protection agency. Have you had any contact with them on this matter, and, if so, what is their position?

[The information follows:]

The following correspondence reflecting the positions of DOT and EPA is provided for the record: Letter from Mr. James M. Fry, Office of Management and Budget, to Honorable James R. Schlesinger, 15 July 1975, with Inclosures.

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF MANAGEMENT AND BUDGET,
Washington, D.C., July 15, 1975.

HON. JAMES R. SCHLESINGER,
Secretary of Defense,
Washington, D.C.
(Attention of Mr. Werner Windus).

DEAR MR. SECRETARY: This is in reply to Mr. Hoffmann's letter of June 4, 1975, requesting clearance of a Defense draft proposal (DOD 94-87) "To authorize the Secretary of Defense to dispose by sale within the United States the Defense Department's entire inventory of the chemical substance carbonyl chloride and to arrange such transportation as may be necessary incident to such sale."

By our letter of April 10, 1974 (copy enclosed), the Office of Management and Budget cleared an identical proposal for transmittal to the 93rd Congress subject to the conditions raised in comments obtained from the Department of Transportation and the Environmental Protection Agency. During our review of your proposal this year, we again requested the views of the Department of Transportation and the Environmental Protection Agency. Both have advised us informally that their positions remain the same.

Accordingly, the Office of Management and Budget again advises that there is no objection to the presentation of the current proposal to the Congress from the standpoint of the Administration's program subject to the conditions expressed by the Department of Transportation and the Environmental Protection Agency. Copies of their comments are attached for your reference.

Sincerely,

JAMES M. FREY,
Assistant Director for
Legislative Reference.

Enclosures.

U.S. ENVIRONMENTAL PROTECTION AGENCY,
Washington, D.C., April 3, 1974.

Hon. ROY L. ASH,
Director, Office of Management and Budget,
Washington, D.C.

DEAR MR. ASH: This responds to your request for the views of the Environmental Protection Agency on the Department of Defense draft proposal 93-80, "To authorize the sale and shipment incident to such sale of the chemical substance carbonyl chloride by the Department of Defense."

As we understand it, the draft bill would authorize the Secretary of Defense to dispose by sale of that Department's inventory of 2,018,000 pounds of carbonyl chloride. This chemical is currently stored in 1,294 one-ton containers at Rocky Mountain Arsenal, Colorado. These stocks were acquired some years ago under the name "phosgene", as part of this country's chemical warfare program.

Carbonyl chloride, now obsolete for use as a chemical warfare agent, is widely used commercially in the manufacture of urethane plastics and related products.

We understand that detoxification of the stocks had been scheduled to begin in the Spring of 1977, but that plans of the city of Denver to expand its airport have prompted a need to accelerate the removal of the chemical from the arsenal. The Department of Defense draft would permit the sale and transfer of these stocks notwithstanding the requirements of P.L. 91-121 and P.L. 91-441 which place limitations on the shipment and disposal of toxic chemicals and biological agents, including the detoxification of any such agent prior to its transfer to another location.

In general, we view the proposed sale and private use of the stocks of carbonyl chloride as being both economically beneficial and energy saving. Sale of the stocks would save detoxification and disposal costs associated with the disposition of the chemical by the Department of Defense. Such sale would also conserve the resources which would be required to produce an equivalent amount of the chemical once the Department's stocks are destroyed.

With regard to the specifics of the proposal, we have reviewed the Department's draft Environmental Assessment, "Disposal by Sale of Obsolete Stocks at Rocky Mountain Arsenal, October 1973", prepared for the proposed action. The draft assessment indicates that the proposed sale would not significantly affect the environment. It outlines the equipment and operational procedures to be followed during the transfer of the chemical to the contractor for conversion of the chemical and the manner in which the empty containers are to be disposed of after such transfer. The draft concludes that a full environmental impact statement would not be required.

Provided that the safety precautions and procedures so outlined in the draft assessment are adhered to by both Department of Defense personnel at the arsenal and by contracting personnel to ensure against any accident which may have an adverse impact upon the environment, we would have no objection to the introduction of this proposal in the Congress.

Sincerely yours,

RUSSELL E. TRAIN, Administrator.

OFFICE OF THE SECRETARY OF TRANSPORTATION,
Washington, D.C., March 18, 1974.

Hon. ROY L. ASH,
Director, Office of Management and Budget,
Washington, D.C.

DEAR MR. ASH: This letter is in reply to your request for the views of this Department with respect to the Department of Defense draft proposal (93-80), a proposed bill: "To authorize the sale and shipment incident to such sale of the chemical carbonyl chloride by the Department of Defense."

There are enclosed herewith four copies of a report setting forth the views of this Department, with respect to the subject proposed legislation.

Sincerely,

RODNEY E. EYSTER.

Enclosure.

DOT VIEWS ON DOD DRAFT PROPOSAL 93-80

I. PURPOSE AND EFFECT OF THE PROPOSED BILL

The proposed legislation would authorize the Secretary of Defense to dispose by sale within the United States the Defense Department's entire inventory of the chemical substance phosgene (carbonyl chloride) and to arrange such transportation as may be necessary incident to such sale. The DOD proposes to dispose of its entire stock of such material (2,078,000 pounds in 1,294 one-ton containers) which are presently in storage at its Rocky Mountain arsenal outside Denver, Colorado. The DOD states that enactment of this Bill is necessary to achieve earlier disposition of this material than originally was mandated by detoxification on site, pursuant to Public Laws 91-121 and 91-141. Such earlier disposition is allegedly necessary and desirable due to the plans of the City of Denver to expand Stapleton International Airport, located close by the arsenal.

The effects of the proposal would among other things result in: (a) transportation of materials which otherwise would be required to be detoxified in situ; and (b) a savings to the taxpayer of a considerable amount of dollars.

II. DOT INTEREST IN THE PROPOSAL

The proposed legislation would authorize the transportation incident to the sale of the phosgene (carbonyl chloride). Such transportation would presumably be required to conform to the standards of this Department for commercial shipment of such material. Our primary concern, however, based on the experience of the DOD in 1969 with similar earlier movements from the Rocky Mountain arsenal, was that the containers in which the phosgene (carbonyl chloride) was stored and shipped did not meet certain DOT requirements, and that DOT special permits had been issued (and, subsequently, cancelled) to waive requirements in the following areas:

1. The tanks used to store and transport the phosgene must be hydrostatically retested every five years. Although the tanks had been tested when constructed, and some had been retested, the tanks had not been retested during the preceding five years. The hydrostatic retest is designed to ensure that the container has not been weakened by either internal corrosion or the effect of transportation. Phosgene is not corrosive to metal; this had been verified by emptying and inspecting a sampling of the stored tanks. External inspection of all tanks eliminated any which had suffered external damage.

In addition, these tanks were designed to withstand 1200 psig of internal pressure and were tested when manufactured to at least 500 psig of internal pressure.

In transportation, with the temperature ranging from 50°F to 110°F, phosgene will develop an internal pressure ranging from 3 psig to 35 psig.

2. The valve protection cap, or bonnet, which is placed over the loading-unloading valves, was not "gas tight" as required by the regulations. However, compensating safety requirements were established. The valve openings were sealed with solid metal plugs, and each shipment was accompanied by trained technicians who inspected each tank at each train stop. These technicians were equipped to repair a leak, if one should develop, and were equipped to neutralize any phosgene in the event of leakage.

III. DOT POSITION ON THE PROPOSAL

The Department of Transportation takes no exception to the adoption of the draft proposed legislation. This is contingent, however, on the assumption that

the transportation incident to the sale of the phosgene will be made in containers which fully comply with this Department's regulations for commercial shipment of phosgene, without the need for a special permit to waive any regulatory requirements.

The Hazardous Materials Regulations of the Department of Transportation classify phosgene as an "extremely dangerous poison-Class A" (§ 173.325(a)) and require this material to be shipped in Specifications 33, 3D, 106A500 or 106A500X containers (§ 173.333). When shipped in Specification 106A500 or 106A500X tank car tanks, each container must be equipped with gas-tight valve protective cap, which must be approved by the Bureau of Explosives, AAR. Each container must be hydrostatically tested every five years. Containers must not be equipped with safety relief devices and they must have sufficient outage so as not to be liquid full at 130°F.

Prior to being offered for transportation, each container must be checked for leakage utilizing a 150°F water immersion test, with the gas-tight cap removed.

Each container must be labeled with the standard "poison gas label" (§ 173.402 (a) (8) and § 173.414(a)). Certain car placement regulations are imposed upon the rail carrier (§ 174.589(k)) and the shipper's documentation must indicate the name and classification of the commodity (§ 173.427(a) and § 174.584.(a)). Each car must be placarded with the appropriate "poison gas placard" (§§ 174.542 and 174.557), and each tank car containing 106A500 or 106A500X tanks must be inspected by the originating carrier and by every carrier accepting the car in interchange (§ 174.596).

Phosgene is a chemical used by industry. It is manufactured by many chemical companies at many different locations. Several locations ship this material on a regular basis. No person has been killed, or injured, due to the rail transportation of phosgene.

The cylindrical tanks used to transport phosgene are approximately 30 inches in diameter, 81½ inches in length, and constructed with minimum 1½ inch high-strength steel. As stated, the tanks are designed to take 1200 psig of internal pressure and tested to 500 psig of internal pressure. These specification containers are used for transporting phosgene, chloride, anhydrous ammonia, hydrogen sulfide, methyl chloride, and many other hazardous materials. To our knowledge, no Specification 106A500 or 106A500X container has ever ruptured in rail transportation and no person has been killed, or injured, in the rail transportation of hazardous materials in this container. Department of Transportation safety personnel have firsthand knowledge of accidents involving Specification 106A500 and 106A500X tanks where the containers were subjected to considerable impact and external loading, but did not leak.

Phosgene is only one of a considerable number of important, useful toxic chemicals which are routinely transported by the railroads. It is no more dangerous to transport than materials such as: hydrocyanic acid, chloropicrin, cyanogen, nitrogen tetroxide, anhydrous ammonia, hydrogen sulfide, hydrogen bromide, anhydrous hydrofluoric acid and hydrogen chloride, to name just a few. To impede the movement of these chemicals would be to endanger the health and well-being of the public and such action would have a severe adverse affect on the economy. To forbid the transportation of this material, would not be in the public interest. Chlorine is needed to purify water, anhydrous ammonia is needed to achieve high crop yield, et cetera.

Mr. GREINER. Well, again, the same thing is true. We have had a continuing series of exchanges with them, and as we prepare and submit plans, they review those and provide us with their comments.

Senator HART. And have they done so?

Mr. GREINER. Yes; we'll provide—we can provide copies of the correspondence with them. (See above.)

Senator HART. All right.

Mr. GREINER. But, again, their position is that as long as we meet the safety precautions and procedures that are outlined, they have no problem.

Senator HART. So, long term, and substantially, you see no opposition from either Transportation or EPA?

Mr. GREINER. That's correct. In fact, EPA took essentially the same position—that this sale is beneficial to the government and to the taxpayer.

Senator HART. Are there any other concerned agencies or departments of the government that you think would be involved in this or should have a position?

Mr. GREINER. Well, HEW is also involved and we clear our plans with them also and, again, as we prepare plans and submit them, they review them and provide us with their comments. I do not anticipate any problem with HEW.

[Supplemental information follows:]

HEW would be involved in review of the particulars of the sale action and the following correspondence reflecting its views is provided for the record:

Letter from S. Paul Ehrlich, Jr., MD, Surgeon General of the Public Health Service, Department of Health, Education, and Welfare, to Mr. Bruce A. Hildebrand, Deputy for Environmental Affairs, Office of the Assistant Secretary of the Army (Civil Works), 19 November 1975.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
Washington, D.C., November 19, 1975.

MR. BRUCE A. HILDEBRAND,
Deputy for Environmental Affairs, Office of the Assistant Secretary of the Army
(Civil Works), Department of the Army, Washington, D.C.

DEAR MR. HILDEBRAND: This acknowledges receipt of your letter of October 2, 1975, whereby you transmitted copies of the Department of Army's Plan. Transfer of Carbonyl Chloride at Rocky Mountain Arsenal; and your letter of October 22, 1975 which provided clarification of the ongoing actions.

This Department has reviewed previously the Department of the Air Force Plan for transfer and transportation of this same carbonyl chloride, and we offered recommendations on precautions necessary to protect the public health and safety pursuant to the requirements of PL 91-121 as amended by PL 91-441. Mr. Robert D. Lanza, Special Assistant to the Assistant Secretary for Health, who was Chairman of that Review Panel along with select members thereof, will review this new Plan. We will complete this review as expeditiously as possible, consistent with our responsibilities under the above cited Public Laws.

Sincerely yours,

S. PAUL EHRLICH, Jr., M.D.,
Acting Surgeon General.

OFFICE OF THE ASSISTANT SECRETARY
OF THE ARMY (CIVIL WORKS),
October 2, 1975.

The SURGEON GENERAL,
U.S. Public Health Service, Parklawn Building, Rockville, Md.
(Attention of Mr. Robert Lanza).

DEAR MR. LANZA: Two copies of the Plan, Transfer of Carbonyl Chloride at Rocky Mountain Arsenal are forwarded for your review and comment.

Sincerely,

BRUCE A. HILDEBRAND,
Deputy for Environmental Affairs.

OFFICE OF THE ASSISTANT SECRETARY
OF THE ARMY (CIVIL WORKS)
October 22, 1975.

The SURGEON GENERAL,
U. S. Public Health Service, Parklawn Building,
Rockville, Md.
(Attention of Mr. Robert Lanza)

DEAR MR. LANZA: Reference is made to the following:

(a) Plan, "Transfer of Carbonyl Chloride at Rocky Mountain Arsenal," July 1974.

(b) Plan, "Transfer of Carbonyl Chloride at Rocky Mountain Arsenal," May 1975.

(c) Letter, OASA(CW), to HEW, 2 October 1975, re Carbonyl Chloride Plan.

Reference *a* was reviewed by the Department of Health, Education, and Welfare and revised to reflect considerations offered by your department. The plan provided for transfer of approximately two million pounds of carbonyl chloride into shipping containers for subsequent delivery to the U.S. Air Force. Due to a re-evaluation of the U.S. Air Force need for this material, the requirement for transfer was cancelled.

The Army is now taking action to dispose of the same material and anticipates enabling legislation to permit sale of this material to industry. Should this legislation not materialize, disposal will be made by other means. Reference *c* forwarded the May 1975 Plan which the Army proposes to implement. The plan is consistent with the previously reviewed plan for support of the U.S. Air Force requirements for carbonyl chloride. Request you review and comment on acceptability of the transfer as described.

The revised plan provides for transfer of carbonyl chloride into shipping containers which would be in compliance with Agent R. M. Grazino's Tariff No. 29, "Hazardous Materials Regulations of the Department of Transportation."

The previously reviewed plan, July 1974, provided for the use of shipping containers which required waiver of above regulations due to the absence of gas-tight valve protection caps.

The need for and the nature of a transportation plan is in part contingent upon the enabling legislation. Such an Army plan would be drafted and coordinated with your organization as a related action.

Sincerely,

BRUCE A. HILDEBRAND,
Deputy for Environmental Affairs.

Senator HART. To date, there have been no substantial objections?

Mr. GREINER. That's correct.

Senator HART. Does the Department of the Army foresee any adverse environmental effects from the proposed sale and shipment?

Mr. GREINER. No, no—in fact, to the extent that we save energy by not having to detoxify, you could say there is a beneficial effect.

Senator HART. Perhaps the area of most public concern is the potential for escape or hazard along the way. General, do you have any comment on this, the possible things that could go wrong, accidents and so on? What would be the effect? You have already talked about the chemical characteristics of the gas to vaporize, lung damage, and so on. Parade the horrors for us, if you would, as uncomfortable as that might be. Give us a "worst case scenario."

General BASS. Well, sir, I'd like to preface it by saying that all the information available and the experience available to us indicates that this event would not occur. Otherwise, we would not recommend such an action be undertaken. If you postulate—which is very unlikely—an accident, it's going to take a great impact to result in the release of carbonyl chloride into the atmosphere. For example, the ton containers have been subjected to drops of 40 feet with no apparent accident—rupture. The protection we are providing over the valves prevents them from being knocked off, should such an event—an accident occur. The experience of the Department of Transportation to date has shown that there have been no casualties resulting from movement of phosgene. But, if you were to postulate, by some means, somehow, it escaped into the atmosphere, it would be dependent upon the weather conditions at the time. Most likely, because it vaporizes very rapidly, it would dissipate rapidly in a vertical manner, going upward as opposed to spreading. And I might point out, that is one of the major reasons that the Army has obsoleted the agent, because

you couldn't maintain a sufficient concentration on the ground to do—to produce the casualties that you wanted to, and it resulted in an unacceptable expenditure of munitions to get a concentration on the ground. It's not like an insidious material that hangs around and drifts out. It rapidly vaporizes and dissipates into the atmosphere. I would have to provide for the record, exactly a distance within which you would have fatalities. I don't have it available to me at the moment, sir, and I will do that.

[The information follows:]

The likelihood of a release of agent during handling or transportation of the DOT specification shipping containers containing carbonyl chloride is considered remote. The shipping containers have been tested to withstand internal pressures of 500 psi and have demonstrated the capability of withstanding drop testing from a height of 50 feet without physical damage or leakage. The ton container valves are protected by a gas-tight protection cap approved by the Bureau of Explosives which offers physical protection of the valves from potential impact and containment of agent in the unlikely event a valve would leak. It should be noted also that DOT experience with this type of shipment has been exemplary. Additionally, Department of Transportation safety personnel have first hand knowledge of accidents involving the carbonyl chloride shipping containers where the containers were subjected to considerable impact and external loading but did not leak. Notwithstanding the strenuous design criteria for the shipping container and the DOT experience in the transportation of carbonyl chloride, the Department of the Army has estimated the worst case hazards effects potentially resultant from a catastrophic failure of a shipping container and subsequent major release of agent. Approximately one-half of any unmasked personnel 1,000 meters downwind from the extremely unlikely event of release of one third of a ton container contents might be medically affected. About one-half of any unmasked personnel 700 meters downwind could be fatalities. This estimate assumes the worst conditions of low wind speed (2 MPH) and instantaneous agent release from an unknown cause.

Senator HART. What about the potential for terrorism or sabotage along the way?

General BASS. I would say, sir, that the potential is no greater or no less than today when you're moving phosgene around.

Mr. GREINER. Or any other hazardous material.

Senator HART. Would you be required by DOT or would you voluntarily provide military escort?

Mr. GREINER. We would not voluntarily provide military escort. For one thing, it's very expensive. For another, it should be no more of a requirement than it is for commercial movement. If escorts are not required for commercial moves, we would not feel an escort is required for our moves.

Senator HART. What kind of precautions in the interests of the safety and health of the people of this area will you take in the steps on the arsenal grounds of transferring this material from its present storage to shipment containers?

General BASS. There's a large number of things that we are doing, sir, that exceed the practice in industry. For example, when industry transfers carbonyl chloride, as we would be doing, from one container into another, or moves it within its organization, it does it in the open. We are doing it in a closed environment, where, should there be any contamination resulting, we can contain it. Now, we pass that contaminated air through a packed column scrubbing system which permits only that amount exiting the facility, the stack, to be below the established threshold limiting value, the TLV, which is very small—

.2 milligrams per cubic meter, I believe. Industry does not scrub. They permit it to go into the atmosphere and dissipate. I have a few others here (General Bass referred to various documents) industry does not have available to them—or does not use, let me put it that way—monitors, alarms in the work area to tell you when you are getting—approaching—an unacceptable concentration of the material in the air. They rely solely on smell. We use electronic devices in the form of alarms and monitors—expensive, but necessary, we feel—to insure the kind of safety that I'm sure the citizens of Denver would want. The worker protection itself is greater than that employed in industry. Industry requires that a man have a protective mask available to him, but not on. In areas such as the room in which we will temporarily store the material in ton containers and when we are attaching hoses in the unloading transfer booths to transfer the phosgene from an old ton container into one that meets Department of Transportation specifications, we will require that the man wear his mask rather than just have it available to him. These are just some examples of the extent to which we are going beyond that which is normal in industrial practice to insure safety.

Senator HART. In the past, the arsenal has prided itself on its safety record and its precautions and has taken steps to assure and reassure local and State elected officials and citizens. To your knowledge, would you have any objection to citizen monitoring of this on-arsenal activity at the time, if this legislation passed?

General BASS. I might point out the Department of Health, State of Colorado, is already monitoring, sir. We certainly concur in this.

Senator HART. But you would have no objection to that monitoring to extend to the activities you're talking about now—preparing for shipment?

General BASS. It already has. For example, they have been furnished the specifications and design of the packed column scrubbing system that I mentioned and they have been tendered an invitation to visit Rocky Mountain Arsenal and observe our testing, to demonstrate that we are doing what we say we want to do, and they have not been able to get out there, but these offers have been made to the health authorities in the State.

Senator HART. On the environmental impact statement, is that being done by the Army voluntarily, or is that in your judgment a requirement of law?

General BASS. Would you rephrase that question, sir?

Senator HART. On the preparation of the environmental impact statement, which is presently under way, is that being done by the Army voluntarily, or is that a requirement of law?

Mr. GREINER. It's voluntary.

General BASS. It's voluntary. As you well know, sir, Public Law 91-190, the National Environmental Policy Act, requires that you prepare an assessment, but if you conclude that there is a potential for some environmental concern, then you would have to go the impact statement route as a matter of course, just to—in the event questions are raised—we prepare both assessments and impact statements. In our case, purely voluntary.

Senator HART. And I have forgotten—I think you have already answered—when you believe this statement will be finished?

General BASS. A statement will be available to the Department of the Army in January.

Senator HART. And submitted to EPA at that time?

General BASS. That's the normal process.

Mr. GREINER. Yes; the draft statement is expected in Department of Army in January.

General BASS. It will then be available to go out to EPA, to the Department of Health, Education, and Welfare, and be filed with the President's Council on Environmental Quality.

Senator HART. In the interests of moving the hearings along, there may be other questions of you gentlemen, and I'd like to reserve the opportunity to submit those to you in writing and have your written answers. If your schedules permit, can you remain with us for a little while in case some other questions arise?

General BASS. Yes, sir.

Mr. GREINER. Yes, sir.

Senator HART. I would like to get to some of the other people. I appreciate your patience and forthrightness in attempting to answer a fairly wide range of questions. I do know that Mr. Wolf is here from Senator Haskell's office and there may be a representative from Congresswoman Schroeder's office. Also Colonel Byrne is here from the arsenal. But I would like to hear from these witnesses later and invite anyone from local government who wishes to be heard to come forward. We don't know who is here or who wishes to present testimony from any of the local units of government, but we'd like to make this opportunity available to you now if you would identify yourselves.

Mr. GREINER. Thank you, sir.

General BASS. Thank you, sir.

Senator HART. Thank you.

ADDITIONAL QUESTIONS

[Questions submitted by Senator Hart, answers supplied by Deputy Assistant Secretary Edwin Greiner.]

Question. Apparently the Army has changed its position regarding the requirement for a full Environmental Impact Statement for this action? Why?

Answer. The Army has prepared an Environmental Impact Statement (EIS) to provide the extra measure of certainty that the assessment is correct or in event legislation is not forthcoming.

Question. What is the current status of the Environmental Impact Statement? Provide the current schedule for the complete coordination of the final EIS.

Answer. The draft EIS is being prepared and is scheduled to be submitted to DA in January. If deemed necessary, it would be filed with CEQ by March 1976. After receipt of reviewed comments on the draft EIS, the final EIS would be prepared, staffed within DA, and filed with CEQ in July 1976.

Question. Who is doing the EIS?

Answer. The EIS is being prepared by the DA Project Manager for Chemical Demilitarization and Installation Restoration and will be staffed at the Department of the Army prior to filing with the Council on Environmental Quality.

Question. What is the estimated cost of the complete EIS?

Answer. The cost of preparation and staffing the EIS is estimated to be \$40,000, based upon one professional man/year. We consider this cost to be reasonable to verify our impact assessment.

Question. Are facilities available at Rocky Mountain Arsenal to begin operations associated with the sale of phosgene as soon as legislation is enacted? If not, when will they be available?

Answer. Facilities required for operations associated with the sale have been constructed and final acceptance testing of the equipment is in progress.

Question. Assuming early enactment (January 1976) of this legislation will

the sale be held up by the processing time required for the EIS? By how much? What will this delay cost the government?

Answer. Yes, processing of the final EIS would delay completing the sale by 5-6 months. This delay will result in no increased costs to the government, but will keep the carbonyl chloride at the Arsenal 5-6 months longer.

Question. In his August 4, 1975 letter to the President of the Senate, the Acting Secretary of the Army speaks of the alternative to commercial sale of the phosgene. He says carbonyl chloride can be converted into other commercially useful products such as hydrochloric acid. Explain what products could be made from the phosgene and what price they might bring on the open market.

Answer. Approximately 72 percent of carbonyl chloride production is used in making diisocyanates from amines. One major example is the production of toluene 2,4- and 2,6-diisocyanates (80/20 mixture) which is commonly called TDIC or toluene diisocyanate. TDIC production goes into polymers, mostly into polyurethane foams. The market price of TDIC is \$.32 per pound. Products which the Army had considered making included hydrochloric acid and urea. Although these products would be considered useful commercial chemicals, the market value would be minimal (e.g., \$.06-.07 per lb for urea) and saleability was considered, at best, marginal due to low concentration of product and potential high transportation costs per unit volume. Costs of conversion of carbonyl chloride by the government would not have been offset by the potential market value of the resultant product.

Question. How soon would the necessary construction and building alteration incident to the sale and transfer of the carbonyl chloride begin?

Answer. These actions are essentially complete.

Question. What is the source of funding for any construction and building alteration?

Answer. Construction and building alterations accomplished in support of the program have been minor (less than \$50,000). Major costs in the establishment of operational facilities have been associated with equipment installation and testing, as well as engineering support. The source of funding for all of the costs to date for the carbonyl chloride sale project has been Operations and maintenance, Army funds.

Question. Do you think the legislation should be amended to require the full study to be sent to this committee for review before the Army can proceed with planned transfer operations?

Answer. The Department of the Army has no objection to the suggested committee review; however, it is considered that such a review has in essence taken place, or will take place by virtue of Congressional Hearings, administration staffing of the legislative proposal, and submission of finalized plans to appropriate federal agencies for comments.

STATEMENT OF HAROLD KITE, MAYOR PRO TEM OF COMMERCE CITY, COLO.

Mayor KITE. Senator Hart, military personnel present, and distinguished guests. I am Harold Kite, mayor pro tem of Commerce City, and I do wish to extend our appreciation for being able to host this this morning. We do want to also state that we, in Commerce City, Adams County, the immediate area, have always considered the military and the Rocky Mountain Arsenal to be a very close and very cooperative friend and one that we hope that is there to work with us for many years to come. We have found that, over the years, regardless of what the project has been, the Rocky Mountain Arsenal and the military always have been more than willing to keep us informed to insure our safety and I personally have lived—as many of the residents of Commerce City have—adjacent to and in very close proximity to the main gate of the Rocky Mountain Arsenal. At no time have we had any fear or concerns about our safety in regard to any project that was being undertaken at the Rocky Mountain Arsenal.

They have always maintained an extremely high safety standard within the boundaries of the Rocky Mountain Arsenal and have always maintained and expressed their concern for the safety of those residents beyond the boundaries of the Rocky Mountain Arsenal. We feel that any safety that has been jeopardized as far as the military and the Rocky Mountain Arsenal is concerned has come from beyond its boundaries, trying to encroach upon it, rather than the safety factors being negligent within the arsenal.

As far as any economic base—or economics—if the military and the Rocky Mountain Arsenal are desirous of the project which the hearing has precipitated this morning, and their statement is that it is in their interest, in the national interest, or local interest, we would have no qualms with working and cooperating with the Arsenal in that direction.

Senator HART. Thank you very much, Mayor Kite. On behalf of the Armed Services Committee members and all of my colleagues in the Senate, I want to express our appreciation for you coming out this morning and speaking for your colleagues in local governments in this area, and I want to repeat my thanks for your hospitality in using the facilities here this morning. We have had considerable correspondence in the last few weeks and months over arsenal-related matters, and I have greatly appreciated and profited from the comments of you and your colleagues in this matter. As you well know, it is not my interest, nor, I think, the interest of other members of the congressional delegation to jeopardize the economy or the economic base of this or surrounding communities.

My own concern has consistently been questions of long-term public health and safety for all the residents in the area. I share with you an appreciation for the safety record at the arsenal and have never really challenged that. The question is, 25 or 30 years having passed, whether changing conditions, particularly the growth of the community around the arsenal, may not have called into question some of the activities that may not have been hazardous in the past, but may have become more hazardous through these changing circumstances. But the specific item here this morning is one that I think all of us can agree on; that is, the disposal of a chemical agent that the Army wants to get rid of, the arsenal personnel and command wants to get rid of, but the law does not presently permit it to be transported to commercial users, even though it's the same kind of product that is routinely transported in civilian nonmilitary uses. So I greatly appreciate your statement here today and would only ask if you have any specific comments on this bill. Do you have an opinion on behalf of the people you represent about the shipment out of the arsenal by truck or rail of this compound and whether it causes any particular question or concern in the minds of your constituents?

Mayor KITE. I'm sure you are well aware of the nature of Commerce City. Being primarily an industrial center, we do have considerable amounts of chemicals moving throughout the city without having any contact with the military or the Rocky Mountain Arsenal, and the fact that we have several refineries, gasoline storage, and large chemical companies within the city. If, as I said before, the Department of Transportation, the military and the Rocky Mountain Arsenal personnel guarantee the safety of the movement in and out of the arsenal

of any product, we have no concern because we have that much faith in the personnel at the Rocky Mountain Arsenal to guarantee our safety.

Senator HART. I want to leave with you the same understanding as we have with all of our witnesses. If you, in your official or individual capacity—or any of your colleagues in government in this community or surrounding communities want to add statements or information for the record within the next 7 days, you are certainly welcome to do so. Mayor, to your knowledge, are there other government officials from the area who wish to be heard?

Mayor KITE. I don't know whether they wish to be heard. We do have several here. We have the county commissioner here and I have additional councilmen and mayors from the area that are here.

Senator HART. I would like them to identify themselves and if anyone wishes to add to Mayor Kite's statement, you're certainly welcome to do so.

STATEMENT OF JOHN CAMPBELL, COUNTY COMMISSIONER, ADAMS COUNTY, COLO.

Mr. CAMPBELL. Good morning, Senator, ladies and gentlemen. I am John Campbell, county commissioner in Adams County. On behalf of myself and the Board of County Commissioners of Adams County, I endorse completely the statements of Mayor Pro Tem Kite. He states them emphatically, the way we feel about the arsenal, the way we feel about the cooperation they have given us in the past, and the way they have kept us informed of what's going on, and invited us to their presentations and completely cooperated with us in the past. What we know about the proposed legislation is what we have been provided by your office and by the press and it appears that there is no doubt that commercial carriers are doing this daily. We have no quarrel with the legislation. If the taxpayers are going to have some money saved for them, we're all for it every bit down the line as long as the applicable safety provisions of the Federal, State, and local governments are complied with. We feel that the legislation would do some good for the people. And, other than that, there's not really much to say on the proposition, in the interest of saving a little time.

We are interested, as the county commissioners, in seeing that the arsenal remains in Adams County and that, if possible, there are some projects by the Department of Defense which can be transferred to the arsenal and be compatible with the locality, we are all for it and we would like to see it. In any event, we do want to reiterate our previous comments to the Senator—that the arsenal belongs in Adams County, and we would like to see it kept there.

Senator HART. Mr. Campbell, I appreciate your presence here this morning, and I appreciate your remarks. We have made an effort to supply the legislation and the relevant documents to the local units of government, both city and county, and if there is additional information that you or your colleagues need for Adams County, I hope you will let us know.

For myself, I have taken no position as to whether the arsenal should be in Adams County or in some other county. I see no particular reason why it should fall under the jurisdiction of Denver, and I know that's

the concern of many people in government in this area. I know there is some interest on the part of Denver in that property and I certainly have no particular reason to support that effort and the concerns that I have expressed about safety in the past are completely unrelated to any jurisdictional conflict that may exist between Adams and Denver Counties.

The military representatives here will be more than happy to cooperate with you and try to answer any questions.

Mr. CAMPBELL. Thank you, too, Senator. We appreciate your time and the interest you have in coming out here.

Senator HART. Thank you. Any other local officials? Even if you don't want to make a statement, we'd like to have your presence recorded.

STATEMENT OF MAYOR AL WILLIAMS, COMMERCE CITY, COLO.

Mayor WILLIAMS. I am Al Williams, mayor of Commerce City. I think Mayor Pro Tem Harold Kite has presented the views of the government in Commerce City and the people very well and would like to, of course, add to that in this manner—that we do consider the arsenal a very important part of Commerce City and we go along, of course, with the arsenal and the personnel in command. Whatever their desires are, we hope will be beneficial to the city, and we will go along with that.

Senator HART. Thank you very much, Mayor.

STATEMENT OF COUNCILMAN LYNN O. AULT, COMMERCE CITY, COLO.

Mr. AULT. I am Councilman Lynn Ault, Commerce City, and I think the mayor pro tem said everything that needs to be said, with the exception that we'd like to also show our appreciation for you coming here and affording us this opportunity to state our positions. Thank you.

Senator HART. Thank you. Any others?

STATEMENT OF COUNCILMAN KENNETH MITCHELL, BRIGHTON, COLO.

Mr. MITCHELL. Senator Hart, I appreciate you taking time from your busy schedule to come to Commerce City to give us an opportunity to share our thoughts with you about the Rocky Mountain Arsenal and the phosgene gas. For the record, I would just like to read the following.

Senator HART. Could you identify yourself?

Mr. MITCHELL. I am Ken Mitchell, from Brighton, Colo., and this is a copy of the letter that I gave you earlier.

Senator HART. Yes.

Mr. MITCHELL. Senator Hart, it is most refreshing to hear of a plan to sell phosgene gas that is presently stored at Rocky Mountain Arsenal.

In my mind there should be very little question about the feasibility, the economics or even the general well-being of the community, over

the sale of a substance known and sold commercially as carbonyl chloride.

Sale of this chemical in and by the private sector has never been prohibited. It is transported across our nation with regularity and remarkable safety.

This substance was sold once before by the Army in more than 3,000 one-ton containers and were moved without incident. Unfortunately, a few headline-seekers raised the spectre of dire consequence if these movements were allowed to continue.

As a result of political pressure, the sale was stopped and transporting the material was outlawed.

Now, 6 years and some \$15 million later, a new proposal to sell the same substance from the Rocky Mountain Arsenal, just as commercial manufacturers are doing, is being reconsidered.

All of which points to one key fact: there has been an awful lot of time and money wasted simply because people don't work together.

I say, let's get on with the sale, and the quicker the better.

The savings in tax dollars in a shortened demil program will be a distinct advantage. In addition, the actual money realized from the sale would be a feather in the hats of both the U.S. Army and the members of the Armed Services Committee who supported the plan.

We hardly need to mention that Rocky has been a political football for 10 years or more. The employees at Rocky, too, have taken their lumps even though they have done more than their fair share of the dirty work for the Army.

Now what is needed is for all to work together to get some good, sound projects plugged into the plant with the capabilities already existing at Rocky to provide steady employment for the 800 workers there. There is nothing so precarious as being employed in a phaseout program as the present demil program for the obsolete war gases stored at the arsenal.

The economic impact the military community has on the metro area is something that cannot be ignored. And it is extremely important—nay, absolutely essential—that a strong, environmentally clean program be planned and implemented to keep Rocky a viable facet of the Denver area.

I feel a master plan for the arsenal is something long overdue. And something that is owed particularly to the people of Adams County who have seen land that was originally theirs be piecemealed and squandered.

Let it not be forgotten that those 24 square miles that make up the military reservation at Rocky are all from within the boundaries of Adams County. This was originally a contribution to our country—made to our country in a time of a major national crisis.

The general support of Rocky by the population of Adams County has been consistent. The value of its operation to our region has always been fully appreciated.

Let it be known that whatever hand-wringing there has been, whatever demands for additional safety, have all come from other quarters, not from the lips of those who live in Adams County.

Yet at every turn whenever Rocky land has been demilled, who has been the beneficiary? The city and county of Denver. Not one

inch of excess land has been passed from the Army to the county of original dedication which, I repeat, is Adams County.

Whenever we talk of the square mile for the expansion of Stapleton International Airport, the parcel of land for the Denver Water Board, the piece for the Denver City Shops or the acreage for the postal annex service facility, we always see the benefit go to the City and County of Denver and, at the very best, part to the entire metropolitan area.

Now there is a great deal to be said for metropolitan cooperation. But count the parcels of former Adams County land that have been contributed to the metropolitan good and then say we in Adams County have been uncooperative.

As a matter of fact, we in Adams County feel we have done more than our share. We cannot afford to pay off any longer for the needs of the entire metropolitan area and especially for the needs of Denver.

There are strong feelings here that now is the time that a few of the piled-up political IOU's get called in and payment made.

We aren't asking for a great deal. Simply that Rocky be maintained; that the environment be protected; that the wildlife on these vast spaces be given a viable habitat; that quality employment of a permanent nature be developed for our people.

This latter can be done if the present utilities and plant capabilities at this great military reservation be utilized to 100 percent of their capacity.

With over \$200 million of taxpayers' money invested in this plant at Rocky, there is need to become more efficient and more economical in putting these capabilities to their fullest use.

The U.S. Army has done an outstanding job of protecting the environment at Rocky. Their safety record in an area so delicate as nerve gas and other toxic material is as close to perfect as is humanly possible—far and away superior to the safety record of any comparable manufacturing plant in the private sector.

The prairie lands that we, in Colorado, hold so dearly are a natural playground not only for the wildlife, but the inhabitants of the metropolitan area as well. As the toxic materials are phased out, the natural open spaces should be phased in as campsites for the disadvantages and as field laboratories for would-be scientists in our school systems.

Rocky's proximity to Denver is a great boon to those disadvantaged and to the school children who cannot afford trips to the mountains to get that wide-open feeling that we westerners crave and almost demand.

Senator, I support your efforts in moving the phosgene materials in a sane and economically minded manner.

In turn, I solicit your support for a master plan for Rocky that will provide good open space and steady, permanent employment for the working classes of the metropolitan area.

With mutual cooperation, great programs, great economic and environmental benefits can be generated for the Rocky Mountain Arsenal and the Denver metropolitan area. Senator, I thank you.

Senator HART. Mr. Mitchell, I thank you, and I don't think the record reflects the fact that you are a councilman from Brighton.

Mr. MITCHELL. Well, let me tell you how it is. I served on the council for ten years. I served as mayor 6 years of that ten, and then 2 years ago I lost the election and then last month I won again.

Senator HART. Some of us are familiar with the political ups and downs.

Mr. MITCHELL. You can't win them all.

Senator HART. Or, on the contrary, you can't lose them all. I want to thank you. I think this is an excellent statement and I think it identifies a number of the concerns of, not only elected officials, but the people that the elected officials represent in this area. You have made a significant contribution to this hearing. I wholeheartedly support your proposal for a master plan. I think it makes a great deal of sense and it would be a positive step.

Second, for myself, I couldn't agree more with what you have said, and specifically, in a paragraph in your statement where you say the following: "The prairie lands that we in Colorado hold so dear, are a natural playground not only for the wildlife but the inhabitants of the metropolitan area as well. As the toxic materials are phased out," and I think that's a key phrase, "the natural open spaces should be phased in as campsites for the disadvantaged and as field laboratories for would-be scientists of our school systems." I think that is a very excellent proposal and one that, more than anything else I've seen, describes my own feelings. I think it's important for all of us with regard to the very controversial subject of the arsenal and its future in this community to keep absolutely separate this question of jurisdiction over the property and the question between Adams and Denver Counties, and the other question of what's in the interest of the people of both counties and the surrounding communities. In the past—those of us who have been critical of some of the activities at the arsenal, because of changing social circumstances and the growth of the community—have left open the question of jurisdiction.

I want the record to be perfectly clear that nothing I have had to say in the past about those questions of public health and safety had anything whatsoever to do with any effort by anyone in the Denver City or county government to get rights to arsenal property. I haven't really given a lot of thought to what should go on there—as you say, "as toxic materials are phased out." But I think like your idea of retaining open space, of not letting that property go to commercial development or residential development.

As far as I'm concerned, if it's the judgment of most of the people in the area that there should be continued military industrial efforts, that's fine also. I'm not making any judgments that the entire operation should be dismantled.

There may be other activities that the Army and the Defense Department can continue with out there to keep people employed that do not jeopardize the safety of the people in the area. I think that's another distinction that should be made. I have never proposed closing down the arsenal or chasing the military away or costing people their jobs. There are a lot of other activities that can go on there of an industrial nature, of a military nature, that aren't as hazardous as some of the activities that have gone on in the past. But if the Army makes a judgment that military activities should be phased out, I

think your idea of a master plan for the use of that area is an excellent one that those of us in the congressional delegation, those of you who represent local units of government, the citizens themselves, and, particularly, the residents of Adams County, could participate in. On behalf of the committee, I think you have made a very excellent statement here and one that I could subscribe to completely.

Mr. MITCHELL. Our goal is to help you to make the movement on the phosgene and save the money. We would certainly hope that we could get your support to get some good, clean projects back in to use those existing facilities that would be compatible with open space and have a large open space where the Girl Scouts, Boy Scouts, people could use and still afford the safety for the area. Senator, thank you and your staff.

Senator HART. Thank you, Mr. Mitchell. Mr. Marty Wolf is here from Senator Haskell's office and it is a personal pleasure to see him, both as a good friend and colleague and as a representative of my colleague, Floyd Haskell. Marty, if you have anything you want to add, you're certainly welcome to do so.

**STATEMENT OF SENATOR FLOYD K. HASKELL OF COLORADO,
PRESENTED BY MARTY WOLF**

Mr. WOLF. Thank you, Senator. Senator Haskell appreciates the opportunity to submit a few comments for the record. Sorry he couldn't be here, and I personally appreciate having the opportunity to enter this statement into the hearing record.

Phosgene gas has proven to be a true dilemma for Adams County, Denver, and their environments. Its presence near a large population center poses a constant potential threat to the residents of this area. Yet attempts to transport the gas away from the area to less densely populated regions or for disposal has involved equally intolerable hazards.

The last program designed to dispose of the gas revealed the many dangers involved in handling a lethal and volatile chemical agent. In 1969, Congress reacted to the risks of transporting phosgene gas by requiring the detoxification of chemical warfare agents prior to their disposal. This legislation eliminated the threat to residents of States through which the gas was to be shipped. The stockpiled gas, however, remained a peril to the Denver area.

After 6 years, circumstances now dictate the rapid disposal of phosgene gas. The Department of Defense has proposed a plan which appears on initial inspection to have the twin virtues of safety and economy. It is tempting, after years of inaction, to accept the Defense Department proposals forthwith. But past experience indicates the wisdom of a thorough examination of the details of the process.

Senator Hart initiated these hearings to explore the Defense Department proposals more fully. He is to be commended for holding these hearings here in Colorado and providing a forum for the people most affected by the decisions at hand. Too often policy is dictated from Washington by purported experts—the professional testifiers. The last attempt to dispose of the same gas proved the shortcomings of that process. It was in fact the concern, persistence, and expertise of many

Colorado residents which alerted Congress to the dangers of that effort.

The sale and shipment of phosgene gas is but another step in a program to dispose of all toxic agents at Rocky Mountain Arsenal. It is beneficial that these hearings, while concentrating on the immediate problem of phosgene gas, will inform and involve Adams County and Denver area residents in the larger program affecting these communities. A public airing and evaluation of the merits of the proposed sale of phosgene gas will contribute immeasurably to the future safety of the inhabitants of Colorado and the States through which the gas will be shipped.

I want to close my remarks by again conveying my appreciation to Senator Hart for his efforts to solve a problem which has plagued Denver and its environments for a generation.

Senator HART. Thank you very much, Mr. Wolf, I appreciate your presence here today on behalf of my colleague. I greatly appreciate the time you have taken to come out this morning.

Mr. WOLF. Thank you, Senator.

Senator HART. Are there any other representatives of the congressional delegation, Congresswoman Schroeder, or Congressman Wirth, or Congressman Armstrong? Colonel Byrne is here from the arsenal and I want to thank him for coming and offer him an opportunity to add to the testimony given by Secretary Greiner and General Bass if he so wishes.

Colonel BYRNE. I appreciate the opportunity, sir, but I have nothing to add to the testimony.

Senator HART. Our purpose here today is, as Mr. Wolf has said, not only to hear from the professional witnesses, but from the citizens of the area. I want to make sure that everyone who is here this morning who has any thoughts on this particular legislation or who may have some questions about it, has this opportunity to be heard.

STATEMENT OF JOE PEIFER, COMMERCE CITY, COLO.

Mr. PEIFER. Senator Hart, I'm a newspaperman here in Commerce City and I understood a statement made by the Army—perhaps incorrectly—on the position of this phosgene storage yard in relationship to the administration building, and I was wondering maybe if I directed a question to the colonel, he could make sure that it is in the right location. I understood it to be said that it was northwest of the administration building. If that's true, my information is different from that.

Colonel BYRNE. The toxic storage yard lies to the east of the runway.

Mr. PEIFER. To the east; does it not?

Colonel BYRNE. Yes.

Mr. PEIFER. Directly away from the runway?

Colonel BYRNE. Yes.

General BASS. If I could respond?

Senator HART. General?

General BASS. I said that the administration building was to the west of the toxic yard and you're saying that the toxic yard is to the east of the administration building. It's about 2 miles away.

Senator HART. Is everybody clear on that now—which is east and which is west? Thank you for that clarification. Any other questions or comments?

STATEMENT OF GARY BORNZIN, BOULDER, COLO.

Mr. BORNZIN. My name is Gary Bornzin, and I'm just speaking as a citizen of the area. I live in Boulder. I just had a couple of questions I would like to have clarified that I didn't understand. One was the—is there—evidently there are a great number of private producers of this chemical, and, is there any situation of competition here that the Army is having against these private producers of the chemical, and is there any concern on this matter? And, second, I wanted to ask about the apparent discrepancy between the cost of the detoxification program which was on the order of tens of billions of dollars—tens of millions of dollars—as compared to the supposed savings if the material were sold commercially, which was only on the order of \$2 million or \$3 million? Could I have that clarified?

Senator HART. Yes. In the interests of pursuing regular order, let me repeat the questions and ask the civilian or military representatives to answer them. The first question, and one that I don't think we did touch upon, was the degree to which the sale of this quantity of the compound in the commercial market will be competitive with its commercial producers. General?

General BASS. There are two parts to that question, sir. First of all, we're dealing with two things, the carbonyl chloride and the ton containers in which they're located. Addressing the ton containers first, they are in extreme short supply and the demand far outstrips the supply, so we don't have a problem there as far as competition goes. The same situation should pertain to the sale of phosgene. If you go back to an article we have from the Marketing Reporter, it shows that the outlook for phosgene is continued strong growth and demand for phosgene and that, in reading it, we have the impression that the demand still outstrips the supply, and this has been borne out in the discussions with the Defense Supply Agency. From our point of view, there is no competition.

Senator HART. Have you heard any criticism from commercial producers about dumping this on the market?

General BASS. We have heard none, sir.

Senator HART. I assume that the proposal is fairly widespread in the industrial community so that people know what we are doing?

General BASS. Yes; and when you say dumping it on the market, sir, there is, again, in excess of 1.4 billion pounds produced annually and we have here approximately 2 million pounds. It's only a very small fraction of that amount.

Senator HART. I see. The second question, as I recall, was related to the cost, and the figures that were given, comparing the cost of detoxification on site versus the net return to the government on commercial sale. You might address yourselves to that and be as specific as you can in response to the original question.

General BASS. Unfortunately, when we get into numbers, I have to really go into some notes. The detoxification approach—our estimates are that it would cost a total of approximately \$10 million, including

the costs that we have already sunk into the program today. The cost of selling the material to the government, including the cost expended to date sunk into the program, is approximately \$7.2 million. That gives you a differential of between \$2½ to \$3 million. Not shown in those figures is the fact that we estimate—that is an estimate at the moment—that the government will recover approximately \$1 million through the sale of the ton containers and the phosgene. So, based upon those figures, we estimate that the “cost avoidance,” if you want to call it that, between detoxification and sale is about \$3½ to \$4 million.

Senator HART. Does that answer your question?

Mr. BORNZIN. Yes. Thank you very much.

Senator HART. Mr. Smith calls to my attention that the law presently in effect now contains a considerable number of coordination and safety requirements. The effect of passing the bill under consideration here today would not eliminate those requirements. They would remain in effect, requirements of coordination with Health, Education, and Welfare and other agencies of the Government and strict requirements to protect health and safety. It is important for the record to show that the passage of the bill that we are here to consider today would not eliminate those requirements of coordinating with other agencies or protecting health and safety.

Did anyone else have any questions or comment before we close our session this morning? If not, I want to thank, first of all, the witnesses who have taken the time and trouble to come all the way from Washington—Secretary Greiner and General Bass—and the people who have accompanied them. I want to thank Colonel Byrne and the representatives from the arsenal. I want to thank particularly the local officials who have taken the trouble to come here this morning to give some excellent testimony, Mr. Wolf, the citizens who have joined us, and also Mr. Smith from the Armed Services Committee staff, one of the excellent staff members that all of us rely on so much. So I want to thank all of you for taking the trouble to be here this morning and thank again the officials of Commerce City for their hospitality and the use of the hall. Thank you all very much. The hearing will be concluded.

[Whereupon, the hearing concluded at 10:57 a.m., November 24, 1975.]



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