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STATEMENT OF
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BEFORE THE
HOUSE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE
SUBCOMMITTEE ON ENERGY AND POWER

Dear Mr. Chairman and Members of the Subcommittee:

We are pleased to have been asked here today as you consider H.R. 2620, a bill which would repeal the Helium Act and amend the Energy Policy and Conservation Act to provide for a number of helium conservation initiatives. As you know, we have just completed a report which bears directly on the question of helium conservation. Our report entitled "Unique Helium Resources Are Wasting: A New Conservation Policy Is Needed," was issued on March 7, 1979. We hope the Subcommittee will find it helpful as it considers the subject legislation.

The initial part of my testimony will focus on the findings, conclusions, and recommendations of our report. Following that I will discuss the subject bill and how it relates to the positions taken in our report.

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BACKGROUND

Helium is a gas possessing many unique characteristics. For example, it is inert; it is the lightest of all gases except hydrogen; and it remains a liquid at the lowest temperature able to be attained. These attributes and others presently make helium essential for a number of scientific and technical purposes, such as the cooling of certain materials to the point where they become super-conductors of electricity.

Helium is found only in the atmosphere and in underground natural gas deposits. Although helium is found in all natural gas, only a few natural gasfields contain helium concentrated in significant quantities. Furthermore, most known helium-rich reserves in Texas, Kansas, and Oklahoma, where all existing extraction plants are located, are now under production and are expected to be substantially depleted between 1990 and 1995.

Because helium does not burn, it escapes to the atmosphere as natural gas deposits are produced for fuel, unless it is extracted for use or stored. Recovery from helium-rich natural gasfields is relatively inexpensive--about $13 per thousand cubic feet or less. The recovery of helium from the atmosphere would require vast amounts of energy and is conservatively estimated to cost $2,000 per thousand cubic feet, or about 160 times the cost of present-day commercially produced helium extracted from helium-rich natural gas.

In response to a growing Government helium demand, the Helium Act of 1960 established a Federal helium conservation program. This act authorized the Secretary of the Interior to purchase helium from private producers for (1) Federal agency consumption and (2) conservation for future Government use. Approximately 40 billion cubic feet of helium are in storage as the result of this program.

However, the Federal helium conservation program is now at a virtual standstill. The helium purchase program ended in 1973 when the Secretary of the Interior determined that enough helium had been purchased to meet foreseeable Government needs and terminated helium purchase contracts with private producers.

Incidently, in 1969, GAO reviewed the helium program, primarily from a financial view point and issued a report entitled "Review of the Government's Program to Supply Current and Future Helium Requirements." In that report we recommended terminating one or more of the then existing helium purchase contracts. In contrast to that earlier effort, our current report evaluates helium conservation from a broader resource management point of view and also in light of significant changes in potential future demand since our previous analysis.

The one operating Federal helium plant presently supplies Government agencies, with only a small production surplus--less than 100 million cubic feet in fiscal year 1978--going

into storage. Also, only a small amount of helium--1.9 billion cubic feet as of September 30, 1978--has been stored over the years by the private sector. These storage figures contrast dramatically with the 2.7 billion cubic feet annually that is lost from existing private facilities. This substantial loss from present facilities is even more disturbing because the Government could end up paying a considerable amount in damages if helium extraction companies prevail in their breach of contract claims against the Government. These suits were initiated following the Government's early termination of the purchase contracts. In short, the Government could end up paying large amounts of money for damages, with no additional helium to show for its expense.

The executive branch has interpreted the existing legislation as limited to providing for Federal agency needs. The Federal helium conservation program is also presently entangled in fiscal and legal problems. For these reasons it appears unlikely that any significant additional storage of helium will occur under the existing legislation. Moreover, existing tax and legal disincentives, as well as the short-term profit orientation of private business have resulted in the low amount of helium in private storage.

HELIUM DEMAND AND SUPPLY

Each year about 13 billion cubic feet of helium escape into the atmosphere as domestic natural gas is produced

for fuel and other purposes. The key question is: How long will natural gas continue to be produced, and thus provide the potential for a relatively cheap supply of helium?

Long range natural gas projections are only estimates; and not surprisingly a number of studies have reached different conclusions regarding the availability of gas resources in future years, and thus, the desirability of additional helium conservation measures. For example, a 1975 report prepared by the Energy Research and Development Administration concluded that by 2020, natural gas production will have depleted gas resources to a great extent and that helium will have to be obtained from other sources. On the other hand the 1978 Interagency Helium Study concluded that substantial domestic helium resources (over 350 billion cubic feet) would remain in natural gas in 2030. The interagency study expects that 125 billion cubic feet of these resources will remain in presently known nondepleting gas resources and the majority of the rest will be available in as yet undiscovered gas.

GAO believes that the interagency study, initiated at the request of the House Appropriations Committee, contains weaknesses. For example the Bureau of Mines made the resource projections for the interagency study under the assumption that certain measures would be taken to preserve the presently identified nondepleting helium-rich gas resources. The

interagency study, however, did not contain any recommendations directed towards conserving presently known non-depleting gasfields containing helium reserves. Some of these fields will likely begin to deplete as gas prices rise and the gas becomes economical to produce. Such is the case with the largest of these, the Tip Top Gasfield in Wyoming. Tip Top contains by far the largest amount of known non-depleting helium reserves (about 42 BCF) in the country. Production is expected to begin from Tip Top in 1982.

Conventional helium demands are expected to rise steadily through the year 2000. After the year 2000, demand may rise sharply if presently envisioned energy-related technologies are implemented. According to the Department of Energy and others, helium may be essential to the future development and implementation of nuclear fusion reactors, superconducting transmission lines and magnetic energy storage devices. These technologies could require up to 5 billion cubic feet of helium per year by 2030. In fiscal year 1979 alone, the Government planned to spend over $300 million developing these technologies.

CONCLUSIONS AND RECOMMENDATIONS

GAO recognizes that the United States faces a difficult dilemma with respect to management of helium--one of its most unique, nonrenewable resources. On the one hand, natural gas, the best

source of helium, is rapidly depleting, even as the United States is investing millions of dollars in energy research and development efforts that could require large amounts of helium after the year 2000. On the other hand, long-range resource and demand projections are only estimates and the possibility exists that additional helium resources may be discovered and/or presently envisioned helium dependent technologies may not prove viable.

GAO believes the risk and potential costs of doing nothing outweigh the potential costs of taking measures to conserve helium. We believe the Government should act on available alternatives to prevent the loss of helium to the atmosphere because of:

(1) the large continuing investment in helium-dependent energy-related technologies;

(2) the unique attributes of helium and the possibility of as yet unforeseen uses for helium;

(3) the on-going depletion of the large helium-rich Hugoton Gasfield on which all major helium extraction facilities are located, and the impending production of the Tip Top Gasfield; and

(4) the cost of helium from future available sources which will outweigh the cost of present-day extraction and storage for several decades, if certain assumptions are maintained.

Before alternatives for additional helium conservation can be considered, however, there is a need for the Congress to legislate a new helium policy which would establish within the Federal Government the responsibility for conserving helium for national needs. It should be the purpose of the new helium policy to fix responsibility in the executive branch to deal with the following problems or issues.

--The amount of helium to be stored for national needs.

--The most efficient ways to accomplish conservation goals.

--The responsibility of the taxpayers and of natural gas consumers and producers for bearing conservation costs.

--Encouraging private industry to undertake conservation and storage to the maximum extent possible.

--Determining the financial conditions and the price under which helium controlled by the Federal Government will be made available.

Within the spirit of the new helium policy, the Congress, with the aid and assistance of the Departments of the Interior and Energy, should consider actions under the following alternative options for additional conservation:

--insuring the conservation of potentially large non-depleting helium resources.

--removing the deterrents to the private storage of helium and eliminating the waste of helium at existing

facilities.

--authorizing additional measures such as a new purchase program if actions under the first two options prove inadequate.

Under the new policy, GAO believes that priority needs to be given to developing and acting on efficient methods to conserve helium from the Tip Top Gasfield in Wyoming. Unless the scope of the Federal role is expanded to include national needs it is doubtful whether adequate measures will be taken to conserve this most important helium resource.

GAO believes that a number of actions directed toward conserving helium from existing plants and in nondepleting gasfields appear to be most prudent. However, should continuing analysis indicate that these actions are insufficient, our cost/benefit analysis of a helium purchase program from existing plants indicates that even such a costly action would be a sound investment if certain assumptions hold true.

Under the new helium policy, GAO believes the Department of the Interior should continue to act as the single manager of Federal helium facilities, as well as sales and storage operations. However, the responsibility for determining energy-related helium conservation needs should be placed with the Secretary of Energy. Under a new helium

financial plan, authorization should be granted to the Department of Energy to provide funding to the Department of the Interior for energy-related helium conservation activities. These conservation expenditures should be included in Department of Energy appropriations for transfer to the Department of the Interior. Helium conserved for other than energy applications would be funded by Department of the Interior appropriations. Borrowing from the Treasury and interest expenses of the 1960 program should be excused because they cannot be repaid.

Under the new legislation, GAO believes the Congress needs to take a number of other specific actions to conserve helium in present nondepleting resources, and to encourage conservation from existing private facilites. The Congress under a new helium policy act should:

--Allow Federal agencies--to the extent that supplies are readily available at reasonable prices, terms and conditions--to purchase helium from non-Federal sources. The Secretary of the Interior should then be directed to store and conserve helium produced by the Government plants.

--Allow the Secretary of the Interior to sell such amounts of helium from the Government stockpile if certain conditions exist and as determined necessary for essential national needs.

--Enact a tax incentive for helium storage by permitting helium producers to deduct extraction costs of helium produced for storage from current income in the year in which extraction occurs.

--Require the Secretaries of the Interior and Energy and other relevant agencies, to collaborate on an annual report to the Congress on the activities conducted pursuant to the new legislation and include recommended changes in the program.

In order to establish the mechanism to initiate larger-scale helium conservation measures, should they be deemed necessary, the Congress should include in the legislation a provision that authorizes the Secretary of the Interior, following consultation with the Secretary of Energy to initiate a new helium purchase program and/or construction of additional Federal helium-extraction facilities for the purpose of storing additional supplies.

H.R. 2620

While we have not had the opportunity to complete a thorough technical and legal review of H.R. 2620 we offer the following comments for your consideration.

The subject bill if enacted would establish a number of programs to insure that adequate supplies of helium are available to meet future energy and conservation purposes.

These would include:

(1) the establishment of a Federal Helium Reserve Plan.

(2) the regulation of natural gas commerce for the purpose of helium extraction; and

(3) the establishment of a financial assistance program for private helium extraction.

We support the Subcommittee's initiative toward the passage of legislation which would encourage helium conservation. We should emphasize, however, that we believe that any new helium policy legislation should contain specific language establishing Federal responsibility for meeting national helium needs. The subject bill links helium conservation to energy-related needs much like the present program is tied to Federal needs. While we agree that energy technologies are presently seen as the potential large users of helium, helium's unique attributes may require its use in a wide range of technologies.

For this same reason, we also would prefer to see the primary responsibility for Federal helium conservation remain with the Department of the Interior. The subject bill would establish all Federal responsibility under the Secretary of Energy in a Helium-Energy Office. We agree that the Department of Energy should assume increased helium conservation responsibilities including the determination of energy-related helium demand and the assumption of funding responsibility for

helium conserved for energy needs. We believe, however, that the Bureau of Mines has done a good job of physically managing the Government's helium activities and that the Department of the Interior is the appropriate agency to oversee management of a natural resource which has the potential for use in a variety of areas. We therefore recommend in our report that the Federal management responsibility remain with Department of the Interior but that the Department of Energy be given increased planning and funding responsibilities.

GAO supports a number of the specific steps the bill would take or allow, including:

(1) the write-off of the helium debt;

(2) permitting Federal agencies to purchase helium in the private market; and

(3) the reservation of helium-rich gasfields.

All of these steps are included as recommendations in our report.

In addition our report identifies available conservation measures under three options:

--conservation of helium in nondepleting helium-rich gasfields;

--conservation from existing facilities; and

--authorization of further measures if actions under the first two options prove to be inadequate.

The Helium Reserve Plan established by the bill at

least initially would be aimed at conserving helium from existing facilities. Under such a program the Government would buy all helium offered to it for sale for $1.00 per MCF with repurchase rights remaining with the gas producer. While the reserve plan may be a good way to promote helium conservation from existing facilities, we would question the desirability of enacting such a program until an analysis is completed of just how much helium could be conserved and the total cost of such a program. For example, consideration should be given to the substantial transportation and overhead costs and potential storage problems that could occur should significant amounts of helium be offered for sell to the Government. As written, the subject bill would require the Secretary of Energy to complete such an analysis and submit for congressional approval detailed plans for the helium reserve before its implementation.

We would urge the Subcommittee to consider two other potential problem areas as it considers the Helium Reserve Plan. These are the potential for legal problems and the lack of a specific reference to the ability to write-off helium extraction expenses for tax purposes.

One provision in the bill would defer royalties levied on helium sold to the Government's reserve by gas producers until the helium is resold to the producer. This may, in our opinion, lead to the initiation of litigation by landowners who have

leased gasfields to producers. Landowners may feel they are entitled to the immediate payment of royalties should existing litigation be ultimately concluded in their favor.

The existing language in the bill implementing the Helium Reserve Plan is unclear about the write-off of helium extraction expenses for tax purposes. The bill implies but does not make it clear that gas producers selling helium to the Government for $1.00 per MCF would be allowed to write-off extraction expenses for income tax purposes. The inability to write-off extraction expenses for tax purposes at the time incurred is a significant deterrent to private storage and warrants specific attention in any new helium legislation.

The second major action the bill proposes is the establishment of a helium extraction regulatory program. Under this program the Secretary of Energy would, in 1 year, regulate interstate gas commerce for the purpose of requiring the removal of all significant amounts of helium. Only those companies with existing extraction facilities would be effected initially, with other gas producers becoming subject to such regulation in five years. While the Secretary would have some flexibility to determine which gas would be subject to such controls, it is obvious that this eventually could be a far-reaching approach aimed at capturing all helium contained in produced natural gas.

In keeping with the organization of our report a regulatory program would come under our third option--authorization of further measures to conserve helium. Helium conservation presently is a controversial subject because of the long-range nature of any storage program. While regulation may be a valid measure should other helium conservation measures prove insufficient, GAO would prefer to see a more selective and incremental approach followed, until such far-reaching measures are supported by a definitive cost-benefit analysis. The present bill contains a number of provisions which provide for a flexible approach to implementing its programs. We would urge that the bill be considered with a phased approach in mind.

As we recommend in our report, we stress the need for continuing analyses of helium demand and supply projections which would help identify the most efficient and prudent means to conserve helium. This continuing analysis would hopefully lead to the implementation of incremental programs as the need for helium resources is justified by quantitative analysis. Conceivably such analyses may lead in the future to the conclusion that a measure of the magnitude of a regulatory program is needed. Presently, however, we believe conservation measures should initially emphasize conserving Tip Top helium, and the implementation of other

prudent measures identified in our report to conserve from existing facilities and nondepleting reserves.

In closing, we commend the Subcommittee's efforts to move toward an effective conservation program for this very unique nonrenewable resource. As summarized in the initial portion of this statement GAO's main concern flowing from its work is that any new helium legislation clearly

--establish a Federal responsibility to meet future national helium needs,

--act on a number of measures which could immediately encourage conservation, and

--direct the continuing analysis necessary to insure that the most efficient additional conservation steps be taken as they are warranted.

That concludes my formal statement Mr. Chairman, I shall be pleased to answer any questions the Subcommittee may have.