

GENERAL 008654

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REPORT BY THE

Comptroller General

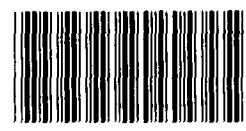
OF THE UNITED STATES

National Bureau Of Standards -- Answers To Congressional Concerns

This report provides information for use by the congressional committees responsible for reauthorizing National Bureau of Standards activities beyond fiscal year 1980.

GAO found that:

- The Bureau has had funding problems because of the "lead agency" concept implemented by the Office of Management and Budget.
- The majority of users of the Bureau's four major services expressed highly favorable opinions on those services.
- No inconsistency, conflict, or substantial duplication exists among the acts that assign responsibilities to the Bureau.



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FEBRUARY 2, 1980





COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-197308

The Honorable Adlai E. Stevenson
Chairman, Subcommittee on Science,
Technology and Space
Committee on Commerce, Science
and Transportation *SEN06205*
United States Senate

Dear Mr. Chairman:

SEN06200
As you and the Chairman, Committee on Commerce,
Science and Transportation, requested on October 10, 1978,
we have continued to monitor National Bureau of Standards
programs and activities. This report concerns (1) prob- *AGC00126*
lems faced by the National Bureau of Standards because of
the Office of Management and Budget's implementation of *AGC000077*
the "lead agency" concept, (2) user satisfaction with the
Bureau's research efforts, (3) an evaluation of the ef-
fects of the Bureau's major reprogramming of its research
efforts, and (4) information on which of the acts assign-
ing responsibilities to the Bureau overlap, duplicate, or
are in conflict with other acts and should be amended or
revised.

As arranged with your office, we will make this report
available to other interested parties.

Sincerely yours,

Comptroller General
of the United States



COMPTROLLER GENERAL'S REPORT
TO THE SENATE COMMITTEE ON
COMMERCE, SCIENCE AND
TRANSPORTATION AND ITS
SUBCOMMITTEE ON SCIENCE,
TECHNOLOGY AND SPACE

NATIONAL BUREAU OF
STANDARDS--ANSWERS TO
CONGRESSIONAL CONCERNS

D I G E S T

The National Bureau of Standards, part of the Department of Commerce, supports the U.S. scientific and technical community by setting standards for the Nation's physical measurement system and carrying out a number of scientific and technical services for industry and government.

The Senate Committee on Commerce, Science and Transportation and its Subcommittee on Science, Technology and Space asked GAO to provide information on Bureau activities to assist in its consideration of legislation to reauthorize Bureau activities beyond fiscal year 1980.

EFFECT OF "LEAD AGENCY" POLICY

The Bureau's ability to do its job has been hampered by the Office of Management and Budget's (OMB's) implementation of the "lead agency" policy. This policy requires that an agency charged with a specific mission be the primary source of funds to support all activities contributing to that mission, whether they are carried out by that agency or by others.

OMB's implementation of the lead agency concept has had a negative effect on the Bureau. OMB has not recognized that measurement is a Bureau lead agency responsibility. It has taken the position that if measurement is directly related to another lead agency's mission, that agency should fund it.

For example, the Bureau has established an environmental measurement program as part of its measurement science activities. OMB decided that this program should be funded from Environmental

Protection Agency appropriations, rather than by direct appropriations to the Bureau, on the grounds that the environment is the Agency's responsibility.

In setting priorities, agencies tend to place at the highest level those tasks most closely related to their direct mission. Inevitably, funds to support measurement science, metrology, and standards development will rank low among another agency's priorities. Funds being considered by another agency for allocation to the Bureau are more likely to be cut or directed to higher priorities within the agency.

RECOMMENDATION

The Bureau's 1901 organic act imposes no mandatory requirements on the Bureau; it simply authorizes the Bureau to perform a variety of functions. If the Congress decides to amend or revise the Bureau's organic act, GAO recommends that the language make clear the areas in which NBS is to have lead agency responsibility. (See p. 13.)

MOST BUREAU CUSTOMERS SATISFIED

GAO sent a questionnaire survey to 838 users of Bureau services and interviewed 36 members of the Bureau's evaluation panels and Statutory Visiting Committee. Most of the individuals contacted gave high ratings to Bureau services. (See p. 17.)

MAJOR REPROGRAMING BY THE BUREAU

Citing budget constraints, the Assistant Secretary of Commerce for Science and Technology directed the Bureau to develop a plan to reprogram about \$11 million of current programs--about 13 percent of its basic program. (See app. VI.) The programs terminated were worthwhile but of lower priority than the proposed programs.

About half of the reprogramming took place in fiscal year 1979; the remainder is scheduled for fiscal year 1980. This was done because of the extent of the reprogramming in relation to the Bureau's total budget and to minimize the impact on the Bureau's scientific staff.

Because the reprogramming took effect so recently, GAO was unable to evaluate its impact on the Bureau's scientific work or on the users of the programs which were terminated. (See p. 26.)

ANALYSIS OF LEGISLATION GOVERNING BUREAU ACTIVITIES

GAO found no inconsistency, conflict, or substantial duplication among the acts assigning responsibilities to the National Bureau of Standards. The 1901 organic act, as amended, provides broad authority to the Bureau and gives it discretion to determine its scientific activities. While specific legislation has been enacted to supplement this authority, setting forth specific mandates, it does not give the Bureau more authority than that provided in the organic act. By enacting specific legislation, the Congress has focused attention on specific national problems and made major policy decisions in the areas of science and technology. (See p. 27.)

AGENCIES' COMMENTS AND GAO'S EVALUATION

The Department of Energy, the Nuclear Regulatory Commission, and the Environmental Protection Agency generally agreed with GAO's conclusions and recommendations.

The Department of Commerce and OMB did not believe that GAO's recommendations to the Congress to clarify the areas in which the Bureau is to have lead agency responsibility would accomplish the intended objective. GAO believes, however, that by congressional designation of the Bureau

as the lead agency for certain measurement sciences, metrology, and standards, the Bureau's difficulties with OMB's implementation of the lead agency concept will be substantially reduced. (See p. 13.)

In the draft report sent for comment to OMB, GAO proposed that the Director, OMB, take responsibility for seeing that lead agencies allocate enough funds to the Bureau so that it can carry out its functions related to the agencies' missions.

In its response, OMB said it recognized the problems associated with the lead agency policy and was attempting to clarify the appropriate Bureau role in various measurement programs. OMB said it would prefer encouraging the Bureau and the agencies involved to establish interagency, long-range agreements so that the lead agency's needs are met and the Bureau is guaranteed some program continuity.

Accordingly, GAO is not making a recommendation to OMB at this time. (See p. 14.)

MATTER FOR CONSIDERATION
BY THE CONGRESS

In view of OMB's position, appropriate committees of the Congress may wish to consider authorizing and appropriating specific funding for those activities which should be considered as National Bureau of Standards lead agency responsibilities. (See p. 14.)

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ABBREVIATIONS

DOE	Department of Energy
EPA	Environmental Protection Agency
GAO	General Accounting Office
NBS	National Bureau of Standards
NRC	Nuclear Regulatory Commission
OMB	Office of Management and Budget

CHAPTER 1

INTRODUCTION

The National Bureau of Standards (NBS) was established by the Congress on March 3, 1901 (31 Stat. 1449). This organic act initially placed NBS in the Treasury Department, but in 1903 it was transferred to the Department of Commerce.

The organic act, as amended, authorizes NBS to undertake the following:

- Developing, maintaining, and disseminating standards of physical measurements.
- Determining physical materials properties and physical constants.
- Developing test methods for materials, mechanisms, and structures.
- Establishing standard practices in cooperation with Government agencies and the private sector.
- Providing advisory services to Government agencies.

Numerous other laws have been enacted which supplement the authorities included in the organic act. Rather than giving NBS more authority, these laws direct that NBS carry out certain activities. Commerce's Assistant Secretary for Science and Technology is responsible for NBS activities.

NBS headquarters is located on a 576-acre site in Gaithersburg, Maryland. This site has 27 buildings, including 7 general purpose laboratories, a nuclear reactor used in various research programs, a fire research facility, a building for sound measurements, and other buildings devoted to special research needs. In Boulder, Colorado, NBS shares a 205-acre site with two other Commerce organizations. Boulder is where NBS work on time and frequency, cryogenics, and electromagnetic measurements is performed. NBS also operates two radio stations that broadcast time and frequency information--one in Colorado and the other in Hawaii.

A major NBS reorganization became effective April 1978. The current organization is shown in appendix I. There are three major organizational units responsible for the NBS scientific and technical programs--National Engineering Laboratory, National Measurement Laboratory, and the Institute

for Computer Sciences and Technology. The goals of these units are shown in appendix II.

NBS has two major administrative organizations. The Associate Director for Programs, Budget, and Finance is responsible for planning, developing, and evaluating NBS-wide programs; developing and carrying out policies on programmatic, budgetary, and financial matters; and developing and executing the budget. Most other NBS-wide administrative functions are the responsibility of the Director of Administrative and Information Systems. In addition, some of the Laboratories/Institute staffs carry out administrative and management functions for their respective major operating organizations.

The NBS appropriation for fiscal year 1979 was \$86.5 million and \$92.6 million for fiscal year 1980. During fiscal year 1979, about 45 percent of the work NBS performed was for and funded by other Federal agencies.

At September 30, 1979, NBS had 3,113 full-time permanent employees of which 2,730 were at Gaithersburg, Maryland, and 383 at Boulder, Colorado. The scientific staff consisted of:

<u>Degree level</u>	<u>Number</u>
Doctors	633
Masters	261
Bachelors	403

Since 1959 the National Research Council, under a contract between the National Academy of Sciences and NBS, has continually evaluated NBS functions and operations. In discharging this responsibility, the National Research Council selects and appoints members to a series of evaluation panels. Members usually serve for 3 years but never longer than 6 years. The scientific disciplines of the members encompass almost all physical science fields.

In appointing members to the panels, the Council attempts to get about 50 to 55 percent of the members from industry and the remaining members from government and academia. Usually, the Council attains this objective or takes action to correct an imbalance.

The NBS organic act provides for the Secretary of Commerce to appoint a five-member Statutory Visiting Committee. The committee is required to visit NBS at least once a year

and report to the Secretary on the efficiency of NBS' scientific work and the condition of its equipment. Committee members are prominent individuals from industry and academia and are appointed for a 5-year period.

SCOPE OF REVIEW

Our review was made pursuant to a joint request dated October 10, 1978 (see app. III), from the Senate Committee on Commerce, Science and Transportation and its Subcommittee on Science, Technology and Space.

In a followup joint letter dated February 28, 1979 (see app. IV), the committees expressed particular interest in (1) the problems faced by NBS because of the Office of Management and Budget's (OMB's) "lead agency" concept, (2) user satisfaction with NBS research efforts, and (3) an evaluation of the effects of the major reprogramming at NBS. Further, to assist the Senate committee in its oversight responsibilities and consideration of legislation to reauthorize NBS activities beyond fiscal year 1980, we were asked to study the numerous acts which assign responsibilities to NBS. The committees were interested in being advised which of these acts (1) overlap, duplicate, or are in conflict with other acts and (2) should be amended or rescinded.

In January 1978 we briefed the committee offices on how NBS fulfilled its responsibilities under 13 specific laws. On March 21, 1979, we furnished the committees with a report (CED-79-29) providing information and observations on the more important aspects of how NBS is administered. The report also explained some complexities of a major scientific organization. In April 1979 we reported to the committees that NBS needed better management of its computer resources to improve program effectiveness (CED-79-39).

We performed our work at the NBS headquarters and main laboratories in Gaithersburg, Maryland. We interviewed key NBS officials and program managers and visited selected laboratories and other NBS facilities. We studied the NBS basic organic act and other specific acts which directly affect NBS operations.

To obtain information on user satisfaction with NBS efforts (research/testing, calibrations, Standard Reference Materials, and Standard Reference Data), we used a mail questionnaire. We received about an overall 90-percent response to the 838 questionnaires mailed. In addition, we interviewed 36 members of the NBS evaluation panels and the Statutory Visiting Committee in the Washington, D.C.;

Boston, Massachusetts; New York City; and California areas to obtain their views and comments on (1) user satisfaction with NBS efforts, (2) the lead agency concept, (3) the NBS major reprogramming, and (4) an overall evaluation of NBS.

We coordinated our work with the Office of Technology Assessment in connection with its then-ongoing study assessing national laboratories and with the Congressional Research Service, Library of Congress. We discussed pertinent matters included in the report with OMB officials.

CHAPTER 2

NBS EFFORTS ARE HAMPERED BY

IMPLEMENTATION OF THE LEAD AGENCY CONCEPT

The ability of NBS to serve the Nation by providing essential measurements, standards, and research and testing services has been hampered by implementation of the lead agency policy within the Federal Government. This policy has hindered NBS efforts to meet immediate national needs and inhibits its ability to prepare for future national needs.

THE LEAD AGENCY CONCEPT

The Office of Management and Budget has adopted the policy that an agency, in carrying out its mission, should be the principal or primary source of support for carrying out that mission. This policy has been commonly referred to as the lead agency concept. Ideally, this policy is a good management tool in that it should help avoid duplication of effort among agencies, particularly those with similar, related, or overlapping missions. Also, such a policy should result in better knowledge of and the control over the cost of carrying out specific missions.

EFFECT OF LEAD AGENCY CONCEPT ON NBS

The lead agency concept is sound in most respects; a single line of responsibility does usually encourage more efficient management of resources. In certain instances, however, NBS programs have been hurt by application of the lead agency concept. In recent years, OMB has rejected some NBS requests for direct funding because it considered the work to be performed as the mission of another agency. As a result, OMB cut base program funds which NBS believed were needed to provide measurement services to meet national needs.

The following case studies illustrate how OMB lead agency policy has caused problems for NBS programs.

Environmental measurements program

As early as 1970, NBS recognized an emerging crisis in accurate and precise measurements as they pertained to air and water pollutants. NBS established a program to meet the crisis. The purpose of the program was to use existing NBS measurement capability and develop new competencies

where required in the national environmental programs. NBS would provide those national standards and measurement methods required by the numerous Federal, State, and local agencies and by private industries addressing environmental problems. Appropriations approved for the program reached a directly funded annual level of about \$2 million in fiscal year 1976.

In addition to the directly funded work, NBS responded to specific directed measurement needs from other Federal agencies and conducted approximately \$1 million worth of other agency work in this area annually.

During fiscal year 1978, in the review process preceding formulation of the President's fiscal year 1979 budget, OMB declared that it was inappropriate for NBS to have directly supported environmental activities and that this work should be funded from the Environmental Protection Agency (EPA) appropriations, the lead agency for the environment. Therefore, starting with the fiscal year 1979 budget, OMB removed essentially all of the NBS direct funding for environmental support from the NBS budget. EPA was to give NBS funds for its environmental work. In addition, at the time of the decision to remove the money from NBS, EPA was directed to develop proposals for NBS work based on EPA needs.

EPA identified six short-term standards and measurement methods requirements that it needed immediately. This request did not consider ongoing programs at NBS to develop fundamental understanding, analytical methods, and reference samples for environmental measurements. The expected level of EPA funding for NBS work in fiscal year 1979 was \$2 million; however, EPA received only an additional \$1 million appropriation to fund NBS work in fiscal year 1979, to which EPA added \$700,000 of its carryover funds. Thus, EPA provided \$1.7 million to NBS instead of the planned \$2 million for fiscal year 1979. Because EPA was having problems with its budget, the NBS work for fiscal year 1979 did not start until mid-April 1979. The nearly 6-month delay (in receiving funds and NBS' termination of a number of its high-priority programs to address the spectrum of national environmental needs) resulted in a severe staff dislocation and disruption of approximately 50 staff-years of work within NBS. NBS management is unsure of the future stability of this program.

Nuclear safeguards program

In 1975 a Nuclear Regulatory Commission (NRC), Energy Research and Development Administration (now Department of Energy (DOE)), and NBS study group delineated NBS responsibilities in nuclear safeguards as a unique measurements and

standards function and recommended direct annual funding (operating) of 35 staff-years. The Energy Research and Development Administration, NRC, Department of State, and the nuclear industry unanimously concurred in 1975 that NBS, supported with direct appropriations, was the appropriate Government agency to undertake the proposed nuclear safeguards measurement standards program. This support was documented in letters to the Secretary of Commerce from the Administrator, Energy Research and Development Administration, the Chairman of NRC, the Acting Secretary of State, and the President of the American Nuclear Energy Council.

Because OMB implemented the lead agency concept, NBS initiated a 7-year program in the fall of 1977 using funds provided by NRC, DOE, and the Department of State along with 28 (instead of 35 as recommended by the study group) new positions provided by OMB for fiscal years 1977 and 1978. The NBS program has not been funded as planned and has been subjected to unilateral budget reductions by the funding agencies. The expected annual operating funding level of \$2.5 million has not been realized, as shown in the following table.

Operating Funds

	Fiscal years			
	1977	1978	1979	1980
	----- (000 omitted) -----			
Planned funding	\$2,500	\$2,500	\$2,500	\$2,500
Funds provided by:				
DOE	-	345	400	360
NRC	870	900	1,000	680
Dept. of State	-	175	175	175
Total	\$ 870	\$1,420	\$1,575	\$1,215
Amount not funded	\$1,630	\$1,080	\$ 925	\$1,285

During these fiscal years, DOE also provided about \$275,000 annually for long-term system studies and about \$575,000 in fiscal year 1978 to provide NBS with laboratory facilities at Argonne National Laboratory and for equipment. In fiscal year 1978, NRC also provided \$100,000 for the NBS program.

NBS feels that these funding levels make it impossible for it to follow the program plan drafted jointly and approved by NRC, DOE, and NBS.

By letter dated September 6, 1979, NCR informed NBS that it will not provide funds for the nuclear safeguards program after fiscal year 1980--4 years sooner than scheduled in the agreed upon plan. In fiscal year 1981, total funding for this program is expected to be \$875,000, a drastic reduction from the expected \$2,500,000.

According to NBS, NRC discontinued its funding because it views the NBS role in the NRC program as a distortion of NRC's mission. NRC maintains that a regulatory agency should not directly fund a program whose major effort supports the regulated industry. NBS cannot deal effectively with other agencies because it has no recourse when they fail to follow a jointly agreed upon program plan.

By letter dated October 29, 1979, DOE informed NBS of DOE's continuing support through fiscal year 1981 and its willingness to increase funding in light of NRC's decision to stop funding.

The program is behind schedule after only 2 years of program activity. In addition, several measurement standards activities which have been identified in the jointly developed plan as key elements of the measurement standards system for nuclear safeguards have received no funding at all.

NBS officials informed us that the severe curtailment of this program will affect the Nation's nuclear safeguards program because certain NBS standards and methodologies that would have been used in the nuclear materials accountability area will be unavailable. Without these standards and methodologies, the decisionmaking process for nuclear materials safeguards will be based on data which has not been validated against national standards.

Finally, NRC's investment of \$3.5 million to date will be less useful than it could have been because the initial work will not be implemented in standards and methodologies. The slowing of the NBS effort is hindering the ability to accurately measure nuclear fuels for nuclear safeguards both nationally and internationally.

According to DOE and NBS officials, DOE is carrying out a comprehensive nuclear safeguards development program utilizing its laboratories and outside contractors. The DOE program provides an indepth integrated safeguards system based on several subsystems including (1) physical security, (2) materials control, and (3) materials accountability. NBS' role in the DOE program is to provide primary measurement standards and services as a foundation

for the accurate measurement needed for the materials accountability portion of DOE's total program. At least 10 DOE-funded organizations use NBS primary standards in their work.

DOE officials have stated that if NBS were not to continue in this national effort, its loss as a source of national standards which are used as the basis for special nuclear material measurements would be undesirable. Also, the loss would require that an alternate and less acceptable source be established to meet national and international needs.

Appliance labeling program

In 1973 the President directed Commerce to develop a voluntary program for manufacturers to label the energy efficiency of major household appliances. Supported by direct appropriations and reprogramed funds, together totaling \$2 million in 18 months, NBS with the participation of all the major appliances manufacturers developed test methods for measuring energy consumption for 8 of the 12 major product categories--including label specifications for half of the categories. In 1975 this program was made mandatory by the Energy Policy and Conservation Act (Public Law 94-163). The Federal Energy Administration (now DOE) was given overall responsibility for this program including the funding of the NBS effort.

A June 1976 memorandum of understanding established between the Federal Energy Administration and NBS spelled out a mutually agreed upon program schedule and provided for a commitment of \$2 million to NBS for fiscal year 1977. However, by March 1977 the Federal Energy Administration had committed only \$600,000 to NBS. Also, \$1 million of NBS funds reprogramed into the voluntary labeling program were eliminated by OMB from the NBS 1978 budget request because it considered this work to be DOE's mission. This budget cut limited NBS' ability to provide support for development of measurement technology in this and other priority areas. Further, even though NBS developed test methods, and efficiency improvement targets for household appliances and developed a unique consumer product testing laboratory, the nature and extent of the NBS mission role in support of this mandated program for the coming years remains to be defined.

Basic technical studies, test method development activities, and mandated program activities have yet to come under effective, coordinated control within the Federal Government. According to an NBS official, DOE's intentions regarding NBS' future role in this area are unclear.

Resource recovery program

The Resource Recovery and Conservation Act of 1976 (Public Law 94-580), enacted October 21, 1976, directed the Secretary of Commerce, through NBS, to hold public hearings and publish guidelines (by October 21, 1978) for the development of specifications. These specifications are needed to classify materials which can be recovered from waste now destined for disposal. NBS took immediate steps to respond to the mandate. It prepared a program plan, a supplemental budget request for fiscal year 1977, and a budget amendment for fiscal year 1978. However, NBS was unable to obtain funds to carry out the directives of Public Law 94-580. On December 6, 1977, OMB ruled that EPA was the lead agency for resource recovery and that NBS should obtain funds from EPA. On December 19, 1977, funds were requested from EPA, but on March 2, 1978, EPA denied funds for fiscal year 1978. Because of the funding problem NBS did not meet the October 21, 1978, mandate of Public Law 94-580.

Steps have now been taken to correct the funding situation. In 1979, the Congress provided a mechanism to allow NBS to obtain funding to carry out the directives of Public Law 94-580. After obtaining congressional approval, NBS reprogramed about \$1 million of its funds in fiscal year 1979. For fiscal year 1980, the Congress approved direct funding in the amount of \$878,000 for this program. Thus, implementation of the October 21, 1976, mandate will begin 2-1/2 years after passage of the law.

NBS' difficulty in responding to the legislative mandate of Public Law 94-580 was that funding was denied because OMB decided that the work under this act was EPA's responsibility under its lead agency role.

DIFFICULTIES FACED BY NBS

A theoretical advantage of the lead agency concept is that it provides focal points for all activities in the executive branch so that resources devoted to a particular national problem can be identified. However, OMB's interpretation of the lead agency concept creates practical problems for NBS.

It is clear from the organic act that NBS has a lead role in measurement science, metrology, and standards. Since measurements are in many instances, an integral part of many other Government departments' and agencies' functions, conflicts have occurred between the NBS measurement roles and other agencies' programs. For example, EPA is the lead agency for controlling pollutants emitted into the

atmosphere. To determine whether the pollutants exceed safe limits, a measurement method and/or standard has to be developed. This would appear to be an NBS function, but OMB has interpreted it to be an EPA responsibility which must be funded by EPA. Accordingly, the NBS basic metrology resource in this area was assigned to EPA.

In setting priorities for resource allocations, agencies, including NBS, tend to rank highest those tasks most closely related to their own direct mission. Inevitably, when funds are limited, measurement science, metrology, and standards development are ranked lower priority by other agencies than by NBS when matched against their own mission. Other agencies are likely to cut allocations earmarked for NBS or re-direct them to their own higher priorities.

Two problems result from this situation:

1. Measurement science and standards needed to deal with national problems will not be available or will not be timely, thus weakening the entire Federal response.
2. NBS' competence, which is or may be crucial to solving national problems, could be weakened.

OMB'S POSITION ON THE LEAD AGENCY CONCEPT

We met with OMB officials to obtain OMB's position on the lead agency concept and application. The officials informed us that the lead agency concept's purpose was to enable the administration to be informed of the cost to carry out its responsibilities and goals. The concept was also to restrict Federal agencies from duplicating or overlapping the work of other agencies. The officials stated that the lead agency concept was being applied across the board to all agencies as it related to specific roles; such as, military, housing, energy, transportation, etc.

When asked what was considered as the NBS mission, the OMB officials did not identify any specific mission but referred to the provisions of the NBS organic act. Section 2 of the act authorizes the Secretary of Commerce to undertake

"* * *the custody, maintenance, and development of the national standards of measurement, and the provision of means and methods for making measurements consistent with those standards, * * *."

Accordingly, it would appear that when an agency, other than NBS, performs work involving the means and methods for making measurements, there may be a conflict with what NBS is authorized to do under its organic act.

If NBS performs work under this section of the act and OMB considers the work to be part of another agency's mission, OMB will not permit NBS to fund the work from its appropriations. Instead, OMB has in these instances instructed NBS to seek funds from the other agency.

Following is an example where a congressional committee took exception to OMB's implementation of the lead agency concept. NBS has had an environmental measurement program as part of its traditional efforts to develop measurement science in general. OMB has recommended that this program be funded by EPA appropriations rather than by direct appropriations to NBS on the grounds that the environment is EPA's responsibility. The House Committee on Science and Technology (in its consideration of Public Law 95-477, Environmental Research, Development, and Demonstration Authorization Act of 1979) rejected the OMB recommendation and instead recommended that appropriations be authorized directly to NBS to carry out the long-term research efforts, which the committee expected should be closely coordinated with EPA. In its report on the proposed legislation, the committee stated:

"* * * OMB is attempting to address the problem of coordination by simplistically ignoring the real overlaps between agency missions and arbitrarily assigning complete authority to one agency * * *."

CONCLUSIONS

OMB's implementation of the lead agency concept has caused problems for NBS. OMB has not recognized that measurement is an NBS lead agency responsibility. OMB has taken the position that if measurement is directly related to another lead agency's mission, then that agency should fund it.

As a result, NBS has been placed in a "catch 22" position. Examples include programs concerned with environmental measurements, nuclear safeguards, appliances, and resource recovery.

The problems created by OMB's interpretation of the lead agency concept must be resolved if NBS is to

- continue its efforts in the measurement science, metrology, and standards needed to deal with national problems;
- develop scientific competencies which are or may be crucial to solving national problems;
- prepare long-range plans to meet foreseeable national needs in a fast moving scientific and technical field;
- carry out current and future congressional mandates; and
- avoid wasting money on programs that may be curtailed or discontinued because of a lack of funding.

RECOMMENDATION TO THE CONGRESS

The present NBS organic act places no mandatory requirements on NBS; it grants NBS broad authority to perform a variety of functions. If the Congress decides to amend or revise the NBS organic act, we recommend that the language make clear the areas in which NBS is to have lead agency responsibility.

AGENCIES' COMMENTS AND OUR EVALUATION

We furnished copies of a draft of this report to the Department of Commerce, Department of Energy, the Nuclear Regulatory Commission, the Environmental Protection Agency, and the Office of Management and Budget for comment. All of the agencies, except for Commerce and OMB, generally agreed with our conclusions and recommendations. Each of the agencies suggested that certain changes be made to add to or clarify information in the report. We considered each of the suggestions and made changes where appropriate.

In our draft report, we had recommended that if the Congress decided to amend or revise the NBS organic act, the language used to "authorize" NBS activities be changed to "shall" or "will" in those instances where the Congress decided that NBS should be the lead agency. Both Commerce and OMB expressed the opinion that our recommendation would not totally accomplish the purpose intended. We believe, however, that by congressional designation of NBS as the lead agency for certain measurement sciences, metrology, and standards, NBS difficulties with OMB's implementation of the lead agency concept will be substantially reduced. We have not changed the substance of this recommendation.

We are maintaining the position that the Congress should make clear, in any revision of the organic act, the areas in which NBS has lead agency responsibility.

In our draft report, we proposed that the Director, OMB, assume responsibility for overseeing that lead agencies allocate needed resources to NBS to carry out its measurement work and to deal with national problems. OMB could do this by:

--Directing lead agencies to coordinate their measurement program needs with NBS.

--Meeting with NBS and other agency officials when the annual budget requests are under review at OMB. At that time, OMB should decide what resources agencies should allocate to NBS and what NBS should do to provide measurement needs.

In its comments on our draft report (see app. XII), OMB stated:

"OMB recognizes the problems associated with the lead agency policy and we are making ongoing efforts to clarify the appropriate NBS role in various measurement programs. We will continue to interact closely with NBS and other agency officials to see that program decisions and funding allocations are made on an equitable basis. However, it is not clear that inter-agency meetings are best held when the budget request is under review, particularly when small amounts of funding are involved. Rather, we would encourage NBS and the agencies involved to work out a program before the budget process at OMB is underway and to establish interagency long-range agreements which will ensure both that the lead agency's needs are met and that NBS can expect some continuity in its programs."

In view of OMB's position, we are not making a recommendation to OMB at this time.

MATTER FOR CONSIDERATION
BY THE CONGRESS

To alleviate NBS's problems caused by OMB's implementation of the lead agency concept, the Senate and House

committees having legislative jurisdiction over NBS could propose legislation authorizing specific funding for those measurement activities the committees deem to be NBS lead agency responsibilities. The Senate and House Appropriation Committees could earmark specific funds for measurement activities that the committees feel are NBS responsibilities and can best be carried out by NBS.

CHAPTER 3

USERS ARE SATISFIED WITH

NBS SERVICES

The majority of respondents to our 838 questionnaires and individuals interviewed (36) expressed highly favorable opinions on four services performed by NBS--research and testing, calibrations, Standard Reference Materials, and Standard Reference Data. The high interest in NBS activities was evidenced by about an overall 90 percent response rate to our questionnaires. A similar interest was displayed by representatives of industry and academia whom we interviewed.

Most of the remarks included in the comment section of the questionnaires and those given orally by interviewees were complimentary. For example, some of the remarks included such statements as:

- NBS is a necessary and unique source of scientific endeavor.
- NBS is an independent monitor and referee (in the scientific field).
- NBS is doing important work.
- NBS has high credibility in the standards and measurement fields.
- NBS is a cornerstone of science in the United States.
- NBS should be the top research agency in the Government.

MAJOR SERVICES PERFORMED BY NBS

The four major services performed by NBS for others are:

1. Standard Reference Data. Primary aim is to provide critically evaluated data to the scientific and technical community to increase the effectiveness and productivity of research, development, and engineering design.
2. Standard Reference Materials. Actual materials in their solid, liquid, powdered, or gaseous state certified as to their chemical composition, chemical property, and/or physical property.

3. Calibrations. Ensures that instruments and devices conform with preestablished NBS standards.
4. Research and testing. Performs basic and applied research and testing in specific areas, under contract and/or agreement, generally with other Government agencies.

NBS SERVICES RATED HIGHLY
BY CUSTOMERS

To obtain users' reactions and opinions on NBS services, we sent a series of four questionnaires to a sampling of NBS customers. NBS could not identify the universe of users of its services. Therefore we sampled a variety of sources; such as, various mailing lists, members of a professional organization, and other sources. The results of the questionnaires cannot be projected to the total universe of users of NBS services. However, we have no reason to believe that these responses would be different than those from a statistical sample of all users of NBS services.

We supplemented our questionnaire inquiry by interviewing 36 members of the NBS Statutory Visiting Committee and panels which evaluate NBS activities. The interviewees consisted of representatives from:

	<u>Number</u>
Industry	22
Academia	13
State	<u>a/ 1</u>
Total	<u>36</u>

a/There are only four State officials among the panel members.

Summary of questionnaires

We received about a 90-percent response to the 838 questionnaires mailed. However, 31 of the responses were received too late to be included in our analysis. Following is a summary analysis of the responses.

<u>Type of service</u>	<u>Questionnaires mailed</u>	<u>Responses analyzed</u>
Research and testing	206	184
Calibrations	200	178
Standard Reference Materials	245	208
Standard Reference Data	<u>187</u>	<u>151</u>
Total	<u>838</u>	<u>721</u>

Most of the responses were from users of NBS services except for Standard Reference Data where only 53 indicated that they had used this service.

Our analysis of the 721 responses to the questionnaires showed that from 89 to 94 percent of the customers were very satisfied or generally overall satisfied with the services performed by NBS. From 68 to 86 percent were satisfied with the timeliness of the research and testing, Standard Reference Materials, and Standard Reference Data services, but only 42 percent were satisfied with the timeliness of the calibration services. Sixty percent of the users of calibration services were of the opinion that the cost of this service was somewhat or much higher than warranted, while 51 to 71 percent of the other users believed that the cost was just right. Further indications of user satisfaction was evidenced by the 63 to 76 percent of the respondents favoring a great or some expansion of services performed by NBS.

The following tabulations, expressed in percentages of responses to specific questions, summarize the opinions of NBS customers to whom the questionnaires were sent.

Percentages of Responses to Questionnaires

	<u>Research and testing</u>	<u>Calibrations</u>	<u>Standard Reference Materials</u>	<u>Standard Reference Data(note a)</u>
Overall, how satisfied or dissatisfied have you been with the services:				
Very satisfied	37	35	48	31
Generally satisfied	52	54	42	63
Neither satisfied nor dissatisfied	6	7	9	6
Generally dissatisfied	3	3	1	0
Very dissatisfied	<u>2</u>	<u>1</u>	<u>0</u>	<u>0</u>
Total	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
In general, how satisfied or dissatisfied have you been with the timeliness of the services:				
Very satisfied	29	13	24	31
Generally satisfied	47	29	44	55
Neither satisfied nor dissatisfied	10	23	16	12
Generally dissatisfied	12	28	13	2
Very dissatisfied	<u>2</u>	<u>7</u>	<u>3</u>	<u>0</u>
Total	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
Do you feel that the cost of NBS services are higher than warranted, just right, or lower than warranted:				
Much higher than warranted	5	9	5	0
Somewhat higher than warranted	19	51	27	2
Just right	71	24	51	67
Somewhat lower than warranted	4	2	5	2
Much lower than warranted	1	0	0	0
No basis to judge	<u>0</u>	<u>14</u>	<u>12</u>	<u>29</u>
Total	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>

	<u>Research and testing</u>	<u>Calibrations</u>	<u>Standard Reference Material</u>	<u>Standard Reference Data(note a)</u>
Do you feel that NBS efforts and/or services should be expanded, reduced, or remain at current levels:				
Greatly expanded	14	15	30	20
Somewhat expanded	49	58	46	44
Remain at current level	34	19	22	26
Somewhat reduced	3	1	0	0
Greatly reduced	0	1	0	0
No basis to judge	<u>0</u>	<u>6</u>	<u>2</u>	<u>10</u>
Total	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>

a/Percentages are based on the replies received from 53 actual users of this service.

Summary of interviews

About half of the 36 individuals interviewed were users of NBS services. However, most of the others felt that they were familiar enough with NBS activities to express an opinion on specific points raised with them. Following is how most of those replying would rate NBS.

<u>Category</u>	<u>Rating</u>
Quality of services	High
Timeliness of services	Timely
Cost of services	About right
Competency of NBS staff	High
Number of NBS staff	About right
Adequacy of NBS facilities	Good or better than good
Expansion of NBS services	Somewhat expanded

Additionally, in response to our question as to whether any of the NBS services should be performed by industry or academia, 60 percent of those responding said yes. For example, some believed that some of the basic research performed by NBS could or should be done by academic institutions while others thought that industry should do more calibrations and NBS should do less.

We asked those interviewed about the type of research NBS should concentrate on; the responses were as follows:

<u>Type of research</u>	<u>Percent</u>
Mixture of applied and basic	77
Basic	13
Applied	<u>10</u>
Total	<u>100</u>

CONCLUSION

The majority of the respondents to questionnaires and individuals interviewed expressed a high interest in NBS activities and had highly favorable opinions on the four major services performed by NBS. A large majority was in favor of somewhat or greatly expanding NBS efforts and/or services.

CHAPTER 4

NBS MAJOR REPROGRAMING

After the fiscal year 1979 NBS budget was approved, the Assistant Secretary of Commerce for Science and Technology directed NBS to develop a plan to reprogram 10 to 15 percent of its base program funds in order to begin higher priority work. The reprogramming was necessary because the tight budget for fiscal year 1980, which included a possible 5-percent overall budget cut for Commerce, would make it difficult to provide NBS with sufficient funding to begin new programs.

While NBS and Commerce officials felt that the programs to be cut were viable and desirable, they were of a lower priority compared with the proposed new programs. These officials felt that most of these projects had matured to a point where further research, if necessary, could be picked up by other institutions. Also, NBS believed that scarce funding and scientific talent would be used more productively by concentrating on the new programs.

NBS selected which programs to terminate by means of a zero-based budget (ZBB) exercise which listed all NBS base programs in priority order. From this list, programs totaling about \$11 million, or about 13 percent of base program funds, were identified by NBS for reprogramming. Because of the extent of the proposed reprogramming in relation to total NBS work and to minimize the impact on its scientific staff, NBS, with Commerce approval, decided to implement part of the reprogramming (\$5.6 million) in fiscal year 1979 and the remainder in fiscal year 1980.

On January 19, 1979, NBS received approval from the House and Senate Appropriations Committee to begin reprogramming \$4,992,000 of work included in the fiscal year 1979 base appropriations and affecting 85 positions. Later, an additional \$669,000 and nine positions were approved for reprogramming.

IDENTIFICATION OF TASKS TO BE REPROGRAMED

In preparing its fiscal year 1980 budget, NBS was required to use the ZBB approach. OMB described this approach as a systematic process in which management carefully examines the basis for allocating resources in conjunction with budgeting and program planning. The principal goals of ZBB were to

- examine the need for, as well as the accomplishments and effectiveness of, existing programs as if they were being proposed for the first time;
- allow proposed new programs to compete for resources on a more equal footing with existing programs;
- focus the budget justification on an evaluation of the programs or activities of each decision unit; and
- involve management at all levels in the budget process.

In complying with ZBB requirements, NBS evaluated and ranked each "task." A task, as defined by NBS, is a collection of closely related efforts oriented toward achieving a single objective within a single program. It is the lowest level of programmatic detail in the budget used by NBS in setting priorities and allocating resources.

Each task in each NBS center was evaluated and ranked by the responsible center director aided by the division chiefs based upon their knowledge of the tasks involved. The following criteria were used.

1. Usefulness of the program. Evaluate the need and importance of the activity.
 - What evidence is there that an important need is being met?
 - What would be the consequences of significant reduction or termination?
2. Quality of service. Evaluate the timeliness and level of service.
 - Does the service fill the user's needs?
 - Is the staff enthusiastic?
 - Is the level of service higher than needed?
3. Cost-effectiveness. Evaluate the results compared to the level of resources invested.
 - Are the results worth the cost?
 - What do performance measures indicate about the cost-effectiveness of the service?

4. Responsiveness. Evaluate the quantity and responsiveness of the service.
 - Is the quantity of the service adequate?
 - Is the service responsive to changes in user needs?
 - Is the service timely?
 - Is there a mechanism for establishing priorities?
 - Are feedback mechanisms in place and used?
5. Quality of the work plan. Evaluate the quality of planning and identification of major issues.
 - Were last year's objectives and milestones met?
 - Are future milestones identified?
 - Are needs and opportunities for improvement identified and included?

Using these evaluations, each center Director prepared a list of tasks in his center ranked in priority order. The lists from all centers were given to the director of the respective Laboratory or Institute, who prepared an overall priority listing for his organization. The latter was submitted to the NBS Program Office which consolidated all priority listings and produced an NBS-wide, ranked priority list. This list, after review by the Associate Director for Programs, Budget and Finance, and the Director, NBS, was submitted to the NBS Executive Board 1/ for final review and approval of the ranking.

Using this ranking, the Assistant Secretary of Commerce for Science and Technology together with the NBS Director and the Associate Director for Programs, Budget and Finance, reviewed each task beginning with the lowest in the ranking to determine which tasks should be discontinued. The review resulted in the termination of tasks totaling about \$11 million, or about 13 percent of the 1979 base appropriations.

1/The Board consists of the NBS Director and Deputy Director; the Directors of the National Engineering Laboratory, the National Measurement Laboratory, Office of Administrative and Information Systems, NBS/Boulder, and the Institute for Computer Sciences and Technology; and the Associate Director for Programs, Budget and Finance.

WORK SELECTED TO BE INITIATED

Programs selected to begin were those receiving the highest ranking through NBS' initiative (new work) review procedures. According to NBS officials, those selected to begin in the fiscal year 1979 portion of the reprogramming required skills which closely matched the skills made available from the tasks terminated.

Initiatives originate primarily from NBS scientific and management staff ideas and are reviewed and approved by a Laboratory/Institute. The Program Office, under the Associate Director for Programs, Budget and Finance, then reviews the initiatives and presents them to the NBS Executive Board, which ranks them to select those to be included in the budget request to Commerce.

The Program Office is staffed with program analysts who are scientists and engineers selected from within NBS for 1- to 2-year tours. Although written procedures have not been issued for program analysts to use in reviewing initiatives or other work, the initiatives must meet certain NBS-specified criteria, such as:

- Problems' significance: economic or commercial importance, social value, scientific value, urgency.
- Match to NBS mission: how the proposal fits the NBS mission.
- Quality of work plan: how the work is to be done.
- Institutional health and competence building: enhancement of NBS role or capability.
- Demand intensity: the perceived importance of the problem.
- Delivery mechanisms: a statement of existing or proposed delivery mechanisms.

In addition to these criteria, the program analysts said they use personal judgment and draw on their own extensive backgrounds in reviewing initiatives.

The program analysts' evaluations of initiatives often result in suggestions to the Laboratories/Institute staffs to combine smaller initiatives or otherwise improve them. The staffs generally accept these suggestions. After the Laboratories/Institute staffs make the needed revisions,

the staffs orally present the initiatives to the NBS Executive Board. The Board, chaired by the NBS Director, rates the initiatives on the extent that they meet each of the above six criteria.

Using the Executive Board ratings, the program analysts list the highest ranked initiatives, point out alternatives, strengths, and weaknesses in initiatives to the Board and recommend which should be included in the preliminary budget presentation to Commerce. Details of the initiative review process for fiscal year 1980 are shown in appendix V. Generally, the same process has been used in past years. We were told that factors other than the NBS criteria, such as budget ceilings and what is politically acceptable, are also considered before initiatives are included in the preliminary budget request. (See app. VI for a listing of tasks discontinued and initiatives undertaken as a result of the 1979 reprogramming.)

EFFECTS OF THE REPROGRAMING

Several members of the NBS Statutory Visiting Committee and evaluation panels interviewed during our review felt that the reprogramming had terminated some very important work which would hurt NBS' ability to meet its basic responsibilities and would seriously lower the NBS scientific staff's morale. Some members informed us that they were perturbed because they were not consulted or otherwise involved in the reprogramming.

NBS officials, however, feel that as a result of the reprogramming, NBS has initiated economically and scientifically important programs under constrained budget conditions and that, in balance, the reprogramming will result in a net economic and scientific gain. They also feel that since no scientific personnel lost their positions as a result of the reprogramming and that those affected became involved in new high-priority work which offered new opportunities and scientific challenges, the long-term effect on morale would be positive.

CONCLUSION

Because the reprogramming at NBS is so recent, it is too early to evaluate its effect on NBS' scientific output or on those who used or might have used the output of programs that were terminated.

CHAPTER 5

LEGISLATIVE AUTHORITIES FOR NBS ACTIVITIES

There are many statutes that provide NBS with authority to undertake programs of science, research, and technology. Included in appendix VII is a brief summary of these statutes. During our review, we found no inconsistency, conflict, or substantial duplication among them.

The organic act (passed in 1901), the principal legislation concerning NBS, provides broad authority for developing measurement standards. Under this act NBS has discretion to determine its scientific activities. The act places no mandatory requirements on NBS; it simply authorizes NBS to perform a variety of functions, including the development of testing methods and the definition of standard reference material. This authority is so broad that it could serve as the statutory basis for all major NBS programs.

Specific legislation, however, has been enacted to supplement this authority. These additional statutory mandates, also discussed in appendix VII, generally do not give NBS additional authority. Rather, they direct that certain activities within the scope of the organic act be carried out. For this reason, there is no conflict between the organic act and the many other statutes involving NBS.

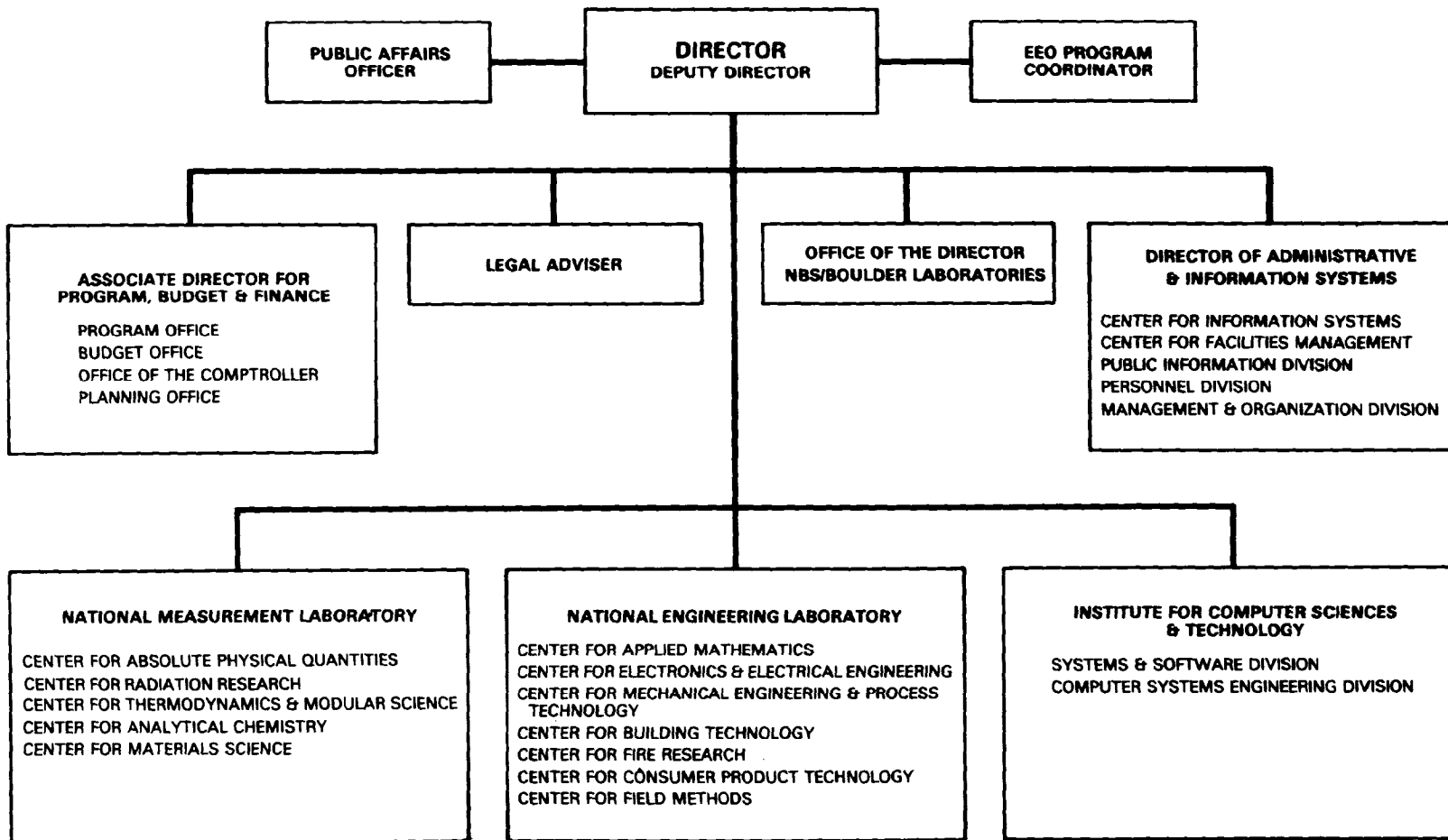
With these mandated activities, NBS has lost some of its freedom to decide which programs are most important to the scientific community. The Congress, instead, has focused on national problems and made major policy decisions in the areas of science and technology. There is no inconsistency in this legislative scheme. It allows the Congress to direct NBS to undertake programs the Congress believes are necessary to solve national problems, such as reduction of air and water pollution or development of new sources of energy. At the same time, NBS still has discretion under the organic act to use its scientific expertise to investigate research areas that it deems important.

The statutes, then, do not in themselves pose any major problems of duplication or conflicting authority. Problems have arisen, however, in the implementation of NBS program activities, primarily because of the lead agency concept. These problems are discussed in detail in chapter 2; but one, probably the most important, deserves mention here. This problem is one of program funding. Many of the statutes that direct NBS to undertake specific tasks do not clarify whether funds for the mandated activity are to come out of NBS'

annual appropriation or are to be transferred from the lead agency. 1/ In appendix VII we discuss the appropriation authorization language, if any, in the statutes we reviewed.

1/Also discussed in chapter 2 is the problem of OMB's difficulty in identifying when NBS is the lead agency in the area of science and technology. As a result, NBS is rarely given the role of lead agency.

**U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS**



(EFFECTIVE APRIL 1978)

LABORATORY AND INSTITUTE GOALSNATIONAL MEASUREMENT LABORATORY

The Laboratory provides the national system of physical and chemical measurement; coordinating the system with measurement systems of other nations and furnishing essential services leading to accurate and uniform physical and chemical measurement throughout the Nation's scientific community, industry, and commerce. It conducts materials research leading to improved methods of measurement, standards, and data on the properties of materials needed by industry, commerce, educational institutions, and Government; provides advisory and research services to other Government agencies; and develops, produces, and distributes standard reference materials.

NATIONAL ENGINEERING LABORATORY

The Laboratory provides technical services to promote development and use of technology and to facilitate technological innovation in industry and Government; cooperates with public and private organizations in developing technological standards and test methods; and provides technical advice and services to Government agencies upon request. It conducts research in support of the specific objectives of these activities; monitors NBS engineering standards activities; and provides liaison between NBS and national and international engineering standards bodies.

INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY

The Institute develops and recommends uniform Federal automatic data processing standards; provides automatic data processing scientific and technological advisory services to Federal agencies; and undertakes necessary research in computer science and technology.

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 MARGARET M. O. STERNETT, MINORITY STAFF DIRECTOR

United States Senate

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION
WASHINGTON, D.C. 20510

October 10, 1978

Mr. Elmer B. Staats
Comptroller General of the United States
General Accounting Office
441 "G" Street, N.W.
Washington, D.C. 20548

Dear Mr. Staats:

The Committee on Commerce, Science and Transportation and its Subcommittee on Science, Technology and Space, in a letter to you dated October 13, 1977, expressed concern about persistent reports of a decline in the scientific capabilities of the National Bureau of Standards, as well as the apparent inability of NBS to respond fully to specific congressional assignments. The General Accounting Office was asked to provide assistance to the Committee and to monitor NBS activities more extensively in the future.

The Committee appreciates the assistance GAO provided in its briefings to the Committee staff on January 13, 1978, and September 27, 1978. The Committee looks forward to receiving two reports discussed at the September 27, 1978 briefing -- one addressing several aspects of NBS's programs and activities and the other focusing on the effectiveness of NBS's ADP resources in accomplishing its mission. The analysis by the GAO will be essential to the oversight responsibilities of the Committee.

The purpose of this letter is to request that GAO continue monitoring NBS's programs and activities and provide the Committee an informal document on the results of this monitoring prior to consideration of legislation to reauthorize Bureau activities beyond FY 1980.

Your continued assistance will be very helpful to the Committee.

Sincerely,

Howard W. Cannon
HOWARD W. CANNON
Chairman

Adlai E. Stevenson
ADLAI E. STEVENSON, Chairman
Subcommittee on Science,
Technology and Space

Harrison W. Schmitt
HARRISON "JACK" SCHMITT
Ranking Minority Member, Subcommittee
on Science, Technology and Space

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 JOHN W. WARNER, VA.

United States Senate

COMMITTEE ON COMMERCE, SCIENCE,
 AND TRANSPORTATION
 WASHINGTON, D.C. 20510

February 28, 1979

The Honorable Elmer B. Staats
 Comptroller General
 General Accounting Office
 441 "G" Street, N.W.
 Washington, D.C. 20548

Dear General Staats:

The Committee on Commerce, Science, and Transportation and its Subcommittee on Science, Technology, and Space in a letter dated October 10, 1978, requested that GAO continue monitoring the National Bureau of Standards programs and activities. It was also requested that GAO provide the Committee with reports on the results of this monitoring prior to consideration of legislation to reauthorize NBS activities beyond fiscal year 1980.

The Committee is particularly interested in the areas of (1) the problems faced by NBS because of the "lead agency" concept of the Office of Management and Budget, (2) user satisfaction of NBS research efforts, and (3) an evaluation, time permitting, of the effects of the NBS major reprogramming of its research efforts.


To assist the Committee in its oversight responsibilities and consideration of legislation to reauthorize NBS activities beyond fiscal year 1980, it would be helpful if your Office of General Counsel would conduct a study of the numerous acts which assign responsibilities to NBS. There are at least 20 such acts (see enclosure). The Committee would be interested in being advised which of these acts (and any other acts) (1) overlap, duplicate, or are in conflict with other acts (including the organic act) and (2) should be amended or rescinded. In this connection, the Committee believes that there should be close coordination between your Office of General Counsel and the GAO team monitoring the NBS programs and activities particularly in the team's consideration of OMB's "lead agency" concept.

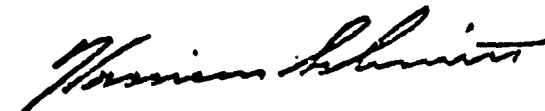
The Honorable Elmer B. Staats
February 28, 1979
Page Two

Your continued assistance will be very helpful to the Committee.

Sincerely,


HOWARD W. CANNON
Chairman

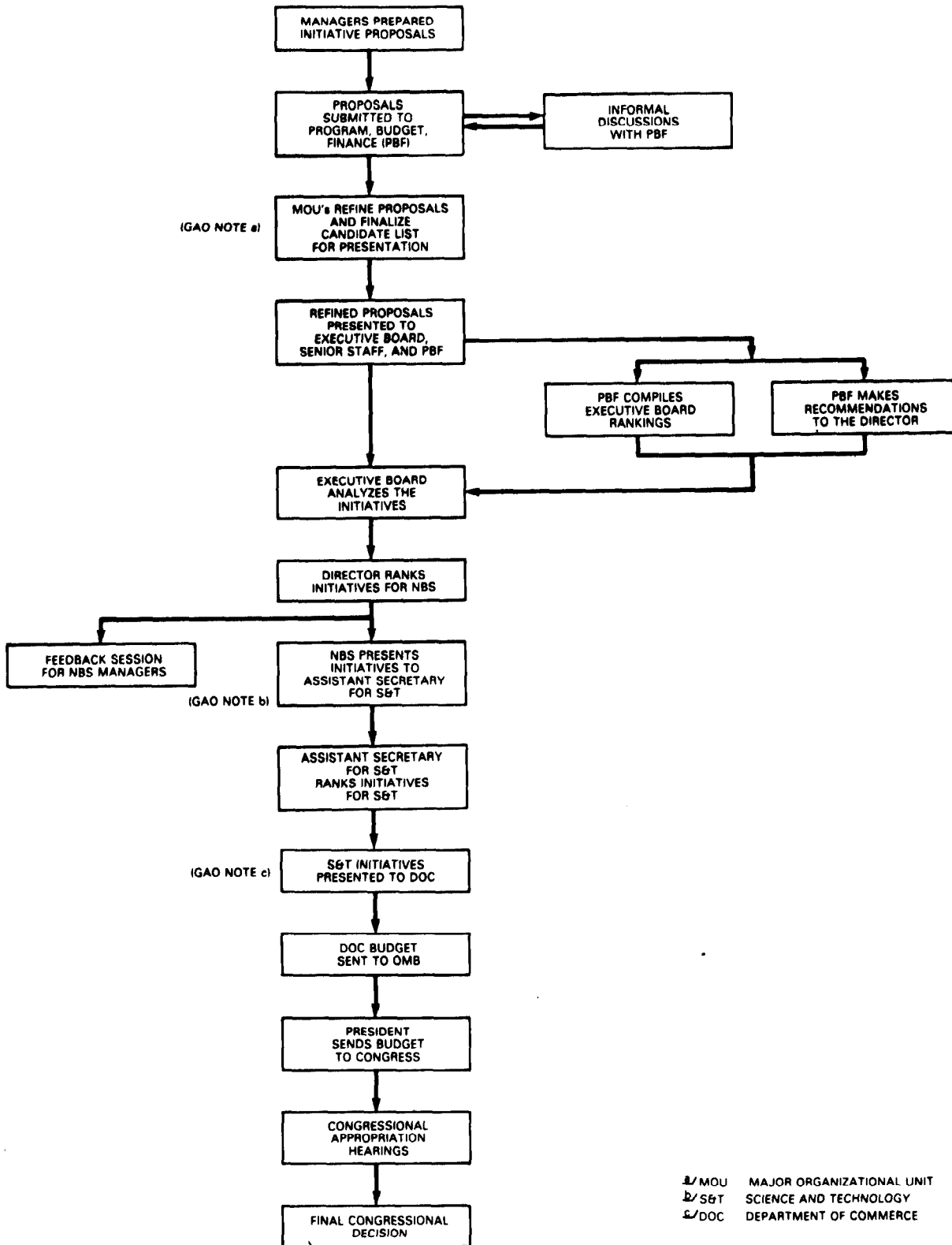

ADLAI E. STEVENSON, Chairman
Subcommittee on Science,
Technology, and Space


HARRISON "JACK" SCHMITT
Ranking Minority Member
Subcommittee on Science, Technology,
and Space

Enclosure

- P.L. 56-177 Act of March 3, 1901, as amended (HBS Organic Act - (c.872, 31 Stat. 1449))
- P.L. 89-306 Brooks Act (1965)
- P.L. 89-755 Fair Packaging and Labeling Act of 1966
- P.L. 90-396, P.L. 94-49 Standard Reference Data Act (1968)
- P.L. 90-602 Radiation Control for Health and Safety Act of 1968
- P.L. 92-573 Consumer Product Safety Act (1972)
- P.L. 92-574 Noise Control Act of 1972
- P.L. 93-409 Solar Heating and Cooling Demonstration Act of 1974
- P.L. 93-498 Federal Fire Prevention and Control Act of 1974
- P.L. 93-577 Federal Nonnuclear Energy Research and Development Act of 1974
- P.L. 93-579 Privacy Act of 1974
- P.L. 94-121 FY 1976 Appropriation Act
- P.L. 94-163 Energy Policy and Conservation Act (1975) - Recycled Oil
- P.L. 94-163 Energy Policy and Conservation Act (1975) - Appliances
- P.L. 94-168 Metric Conversion Act of 1975
- P.L. 94-385 Energy Conservation and Production Act (1976) - Appliances
- P.L. 94-385 Energy Conservation and Production Act (1976) - Buildings
- P.L. 94-580 Resource Conservation and Recovery Act of 1976
- P.L. 95-124 Earthquake Hazards Reduction Act of 1977
- P.L. 95-619 National Energy Conservation Policy Act (1978)

FISCAL YEAR 1980 INITIATIVE REVIEW PROCESS



a/ MOU MAJOR ORGANIZATIONAL UNIT
 b/ S&T SCIENCE AND TECHNOLOGY
 c/ DOC DEPARTMENT OF COMMERCE

NATIONAL BUREAU OF STANDARDS

Fiscal Year 1979 Reprogramming Summary

Activity description	Reprogrammed from		Activity description	Reprogrammed to	
	Changes in permanent positions	Amount		Changes in permanent positions	Amount
		(thousands)			(thousands)
<u>Time and frequency dissemination</u> Improvement of radio signal propagation and mathematical modeling.	-4	-\$254	<u>Electromagnetic interference</u> Development of (1) Near-field combination electric and magnetic power probes to be used to make accurate measurements of average and peak power over a frequency range from 1 to 1000MHz, which will be useful for measuring potential hazardous situations. (2) A probe with instrumentation to measure without distortion - non-repetitive signals for accurate assessment of pulsed and impulsive characteristics, which can affect digital circuits now found in many electronic control devices.	+4	+\$254
Total	-4	-254		+4	+254
<u>Temperature</u> Expertise in temperature sensor development.	-4	-284			
<u>Spectrophotometry</u> Reduction in spectrophotometric services will affect a wide range of industries which depend on accurate measurements of brightness, color and appearance.	-2	-126			
<u>Differential thermoanalysis</u> Efforts in this area have reached the stage where the resources can be used to make significant contributions to resource recovery without adverse effects on industrial practice of materials characterization.	-4	-238			
<u>Thermochemical standards</u> Support services related to the evaluation of thermodynamic properties will be significantly curtailed, in the future it will be the responsibility of the outside user community to resolve any inconsistencies in the thermodynamic data handbooks, which have in the past been noted by NBS.	-2	-189			
<u>Ion chemistry</u> The redirection of resources from ion chemistry will of necessity reduce NBS efforts in support of the users of ion chemistry data. NBS research in this area has reached the point where analytical chemists in the private sector are now able to measure ionization potentials used to identify specific organic compounds.	-2	-146	<u>Resource recovery</u> This reprogramming will allow NBS to meet certain of the several directives of P.L. 94-580 as well as allow new ground to be broken in the field of calorimetry. The NBS expertise in calorimetry will be fully retained but it will be redirected to the design of new types of calorimeters for the specific purpose of measuring the heat contents of refuse derived fuel and municipal solid waste.	+14	+983
Total	-14	-983		+14	+983

APPENDIX VI

APPENDIX VI

Programed from			Reprogramed to		
Activity description	Changes in permanent positions	Amount (thousands)	Activity description	Changes in permanent positions	Amount (thousands)
<u>Electrical standards</u> The completion of a voltage calibration facility will be delayed.	-4	-234			
<u>Temperature</u> Additional cryogenic (very low temperature) reference-point standards will not be developed, and the development of quartzoscillators for ultra-stable temperature reference points will be terminated.	-2	-141			
<u>Spectrophotometry</u> Reference measurements of diffuse reflectance, specular reflectance, and diffuse transmittance (these can generally be described as measurement of "appearance") will be reduced.	-2	-124	<u>Measurement assurance program</u> Resources will be used to develop and establish measurement assurance programs (MAPs) with manufacturers and associations of manufacturers in the areas of electrical, temperature, and spectrophotometric measurements. These MAPs will provide instrument and equipment users with traceability to national standards without requiring frequent direct calibration of critical instruments at NBS.	+8	+499
<u>Total</u>	<u>-8</u>	<u>-499</u>		<u>+8</u>	<u>+499</u>
<u>Electrical standards temperature</u> Development of improved solid-state voltage standards and thin film temperature sensors.	-4	-302	<u>Materials durability</u> This reprogramming into materials durability will form a basis for measuring, quantifying, understanding, predicting and ultimately reducing the major causes of materials failure in service.	+15	+1,169
<u>Atomic properties in alloys; Quantitative microstructure of metals; Polymer structures; Fire retardants in polymers</u> Determination of the atomic properties of alloys and prediction of alloy formation and structure, data evaluation on phase diagrams in metals.	-11	-867			
<u>Total</u>	<u>-15</u>	<u>-1,169</u>		<u>+15</u>	<u>+1,169</u>
<u>Materials utilization data</u> Current activities include x-ray crystal data; phase diagrams of metals; and programs which compile Mossbauer data, high pressure data, and optical materials data.	-7	-333	<u>Recycled materials data center; Materials durability data center</u> With these redirected resources, NBS will initiate two new data centers; (1) recycled materials data center - which will initially focus on the heat values of refuse derived fuels and thermodynamic data on the properties of gases generated from decomposition of organic wastes. Such wastes generate gases which, after appropriate processing can be used to supplement natural gas supplies and (2) materials durability data center - which will focus on physical and chemical data for the identification of corrosion products and wear debris in metals, diffusion of corrosive chemicals into structural steels at elevated temperatures, and design data for facilitating replacement of chromium in stainless steels.	+7	+333
<u>Total</u>	<u>-7</u>	<u>-333</u>		<u>+7</u>	<u>+333</u>

<u>Activity description</u>	<u>Reprogrammed from</u>		<u>Activity description</u>	<u>Reprogrammed to</u>	
	<u>Changes in permanent positions</u>	<u>Amount</u>		<u>Changes in permanent positions</u>	<u>Amount</u>
		(thousands)			(thousands)
<u>Laser-optical materials characterization, magnetic measurements</u> Includes activities in magnetic materials measurements, laser-optical materials measurements and optics and densitometry.	-8	-619			
<u>Image optics and densitometry</u> Work on optical and magnetic characterization of catalyst materials, high-power laser materials, and fuel cell electrodes will be discontinued.	-1	-50	<u>Very large scale integration - VLSI</u> This redirection of resources will enable NBS to direct its unique materials measurement capabilities to establish methods and standards to be used by industry for assuring the quality of semiconductor crystals used in fabrication of VLSI components.	+9	+669
<u>Total</u>	<u>-9</u>	<u>-669</u>		<u>+9</u>	<u>+669</u>
<u>Building regulatory technology</u> Activities include coordination of metric dimensions for the building industry and promotion of uniformity in building regulation. These responsibilities can and will be assumed by the Metric Board, codes and standards groups, trade associations and regulatory bodies.	-3	-271	<u>Building practices for disaster mitigation</u> Initiation of work on improving building codes and standards related to earthquake-resistant design, wind forces, and progressive collapse.	+3	+271
<u>Total</u>	<u>-3</u>	<u>-271</u>		<u>+3</u>	<u>+271</u>
<u>Audiometry, Industrial noise, Acoustical standards</u> Development of new acoustic measurement techniques and methods of industrial noise and vibration control. Dissemination of NBS acoustic research (i.e., standards and measurement methods) has reached the point where it is now possible for alternative public and private sector organizations to support their own R&D programs that address applied acoustic problems. NBS will continue to support on a reimbursable basis EPA, OSHA, HEW, DOT, and other agencies with an interest in noise abatement.	-16	-764	<u>Process technology</u> Development of (1) techniques for real time, in-process measurement of dimension, surface finish, force and torque needed for automation of batch manufacturing; (2) techniques for processing multivariant control for "smart" machines capable of unattended overnight operations; and (3) standards, calibration techniques, and performance measures for the required dynamic measurement and control systems.	+16	+764
<u>Total</u>	<u>-16</u>	<u>-764</u>		<u>+16</u>	<u>+764</u>
<u>Information technology</u> The main activity in this area is other agency advisory services. OMB and GAO have agreed that the needs of the Federal agencies who benefit from the program are best served by concentrating NBS efforts on ADP standards activities.	-18	-719	<u>Compliance measurement and technology forecasting</u> (1) Initiation of a compliance measurement effort to determine the extent to which Federal agencies comply with the existing Federal ADP standards and (2) expansion of the effort in forecasting the changes in computer technology.	+18	+719
<u>Total</u>	<u>-18</u>	<u>-719</u>		<u>+18</u>	<u>+719</u>
<u>Total</u>	<u>-94</u>	<u>-\$5,661</u>		<u>+94</u>	<u>+\$5,661</u>

COMPILATION OF FEDERAL LAWSAFFECTING THE NATIONAL BUREAU OF STANDARDSNATIONAL BUREAU OF STANDARDS ORGANIC ACT
15 U.S.C. §§271 et seq. (1976)

The principal NBS legislation is codified in Title 15, chapter 7 sections 271 et seq., of the United States Code (referred to as the organic act). The act establishes the Federal policy for maintaining measurement standards. Section 2 of the act authorizes the Secretary of Commerce to undertake the following functions:

"(a) The custody, maintenance, and development of the national standards of measurement, and the provision of means and methods for making measurements consistent with those standards, including the comparison of standards used in scientific investigations, engineering, manufacturing, commerce, and educational institutions with the standards adopted or recognized by the Government.

"(b) The determination of physical constants and properties of materials when such data are of great importance to scientific or manufacturing interests and are not to be obtained of sufficient accuracy elsewhere.

"(c) The development of methods for testing materials, mechanisms, and structures, and the testing of materials, supplies, and equipment, including items purchased for use of Government departments and independent establishments.

"(d) Cooperation with other governmental agencies and with private organizations in the establishment of standard practices, incorporated in codes and specifications.

"(e) Advisory service to Government agencies on scientific and technical problems.

"(f) Invention and development of devices to serve special needs of the Government.

This authority is very broad, and under it NBS, operating under a delegation of authority from the Secretary of Commerce, has initiated its major programs. In fact, the authority under the organic act is so broad that it could serve as the statutory basis for all of NBS' major activities.

Significantly, there are no mandatory requirements imposed on NBS under the act. NBS' position as the lead agency in measurement science needs clarification. If the Congress decides to amend or revise the NBS organic act, the language should make clear the areas in which NBS is to have lead agency responsibility. (See p. 13.)

The following statutes impose direct responsibility on NBS. Although many of these acts place authority on the Secretary, Department of Commerce, responsibility under the statutes has been specifically delegated to NBS.

FEDERAL FIRE PREVENTION AND CONTROL ACT OF 1974
Public Law No. 93-498, 88 Stat. 1535 (October 29, 1974)

The act amends the organic act by striking out sections 16 and 17 and by inserting a new section 16 in the organic act which established a fire research center within Commerce. A part of NBS, the center has responsibility for supporting research on all aspects of fire to provide scientific and technical knowledge useful in preventing and controlling fires. Section 18 of the 1974 Fire Act provides, in part:

"Sec. 16(a). There is hereby established within the Department of Commerce a Fire Research Center which shall have the mission of performing and supporting research on all aspects of fire with the aim of providing scientific and technical knowledge applicable to the prevention and control of fires. The content and priorities of the research program shall be determined in consultation with the Administrator of the National Fire Prevention and Control Administration. In implementing this section, the Secretary is authorized to conduct, directly or through contracts or grants, a fire research program, including--

"(1) basic and applied fire research for the purpose of arriving at an understanding

of the fundamental processes
underlying all aspects of
fire. * * *

"(2) research into the biological,
physiological, and psychological
factors affecting human victims of
fire, and the performance of individual
members of fire services * * *

"(3) operation tests, demonstration
projects, and fire investigations in
support of the activities set forth
in this section."

"The Secretary shall insure that the results
and advances arising from the work of the
research program are disseminated broadly.
He shall encourage the incorporation, to the
extent applicable and practicable, of such
results and advances in building codes, fire
codes, and other relevant codes, test methods,
fire service operations and training, and
standards. The Secretary is authorized to
encourage and assist in the development and
adoption of uniform codes, test methods, and
standards aimed at reducing fire losses and
costs of fire protection."

Funding is authorized for this program under section
16(b). The act, as quoted above, provides for coordination
between NBS Fire Research Center and the National Fire Pre-
vention and Control Administration, now entitled the United
States Fire Administration, (USFA). Public Law No. 95-422,
92 Stat. 932 (October 5, 1978). When USFA was within Com-
merce, funding for NBS activities and the activities of
USFA under the act passed through the Department. During
consideration of the authorization for fiscal year 1980, 1/
however, a potential funding problem was raised by the House
Committee on Science and Technology because USFA is no longer
a component of Commerce but is part of the Federal Emergency
Management Administration (FEMA).

1/The authorization bill, H.R. 4016, was in conference at
the time this report was written.

"When both the Fire Research Center and the U.S. Fire Administration were located within the Department of Commerce responsibility for both programs ultimately devolved upon the same person, namely the Secretary of Commerce. Upon the creation of FEMA such is no longer the case and a potential for conflict over program direction exists.

The 1974 organic act states 'the Secretary (of Commerce) is authorized to conduct--a fire research program' and 'the content and priorities of the research program shall be determined in consultation with the Administrator of the U.S. Fire Administration. Thus the act gives basic responsibility for the Center's program to the Secretary and only gives consultative status to the Administration. This division is reflected in the Committee's authorization of all funds for the Fire Research Center directly to the Center. The Administration's appropriation request of \$1.1 billion to the Center with \$3.9 million being received as a pass-through from the USFA appears to detract from the primary responsibility reserved for the Secretary by the organic act. To the extent that the request division of appropriations ensures a strong consultative relationship between the Center for Fire Research and the USFA, the Committee concurs with a division of appropriations (not authorization) but urges the Office of Management and Budget to examine closely the relative allocation of funds in light of the organic act. Whatever figures are finally chosen, the Committee believes it important that the Center must receive sufficient direct funding so that the long term research elements (both basic and applied) of the program

delivered by Sec. 16(a) (1-3) of the 1974 organic act may be carried out independent of changing priorities at the U.S. Fire Administration and other FEMA agencies."

H.R. No. 176, 96th Cong., 1st Sess. 9 (1979).

STANDARD REFERENCE DATA ACT

Public Law No. 90-396, 82 Stat. 339 (July 11, 1968)

The stated policy of the act is "to make critically evaluated reference data readily available to scientists, engineers, and the general public." §1. To accomplish this objective, the act assigns the responsibility for coordinating the Nation's reference data activities to NBS (through delegation by Commerce). Specific authority under the act includes

- the compilation of Standard Reference Data,
- the critical evaluation of such data,
- publication and dissemination of Standard Reference Data,
- coordination with other agencies and private institutions, and
- prescription of standards and criteria for published data. §§3-4.

In addition, the act provides NBS with the authority to obtain copyrights for Standard Reference Data publications. §6.

Section 7 authorizes funding for NBS activities under the act.

FEDERAL NONNUCLEAR ENERGY, RESEARCH AND DEVELOPMENT
ACT OF 1974

Public Law No. 93-577, 88 Stat. 1878 (December 31, 1974)

NBS' responsibility under section 14 of the act is to evaluate all promising energy-related inventions, particularly those submitted by individual inventors and small companies, for the purpose of obtaining direct grants from DOE. NBS is authorized to promulgate regulations to further this responsibility. It should be noted that there is some question

whether NBS activities under this act would otherwise be authorized by the organic act.

There is no specific mention of NBS in section 16 of the act, authorizing appropriations. In 1975 and 1976, however, DOE's authorizations for funding of this program specifically addressed the transfer of funds to NBS. In later appropriations there was no mention of NBS.

DEPARTMENT OF STATE, JUSTICE, AND COMMERCE, THE
JUDICIARY AND RELATED AGENCIES APPROPRIATION ACT, 1976
Public Law No. 94-121, 89 Stat. 611 (October 21, 1975)

In S. Rep. No. 94-328, 94th Cong., 1st Sess. 39 (1975), the Senate Appropriations Committee directed NBS to "embark upon the study of the economic effects of corrosion." A corrosion report "Economic Effects of Metallic Corrosion in the United States" was delivered to the Congress on March 7, 1978. In this manner, the Congress provided specific direction for NBS work under its organic act authority.

ENERGY POLICY AND CONSERVATION ACT
Public Law No. 94-163, 89 Stat. 871 (December 22, 1975)

Recycled Oil Program

Section 383(c) of the act states in part that:

"* * * the National Bureau of Standards shall develop test procedures for the determination of substantial equivalency of re-refined or otherwise processed used oil or blend of oil, consisting of such re-refined or otherwise processed used oil and new oil or additives, with new oil for a particular end use."

NBS must then report these testing procedures to the Federal Trade Commission (FTC). Under the act, FTC is required to adopt the testing methods developed by NBS and incorporate them into its regulations governing recycled oil. §383(d)(1)(A). Importantly, this is one of the few statutes involving NBS which clearly defines the relationship between the Bureau and another Federal agency, in this case FTC.

NBS' recycled oil program, then, is a specific mandate from the Congress. Under the act, NBS is not merely providing support to another Federal agency, but is independently required to develop test procedures. The act does not clarify, however, the manner in which this program is

to be funded. This has resulted in a severe problem for NBS.

Appliance Program

Section 323(a)(2) authorizes DOE to direct NBS to develop test procedures for determining operating costs of specified consumer products and at least one other useful measure of energy consumption of such products.

Section 339, the authorization of appropriations, states that "any amounts authorized to be appropriated * * * may be allocated by the administrator to the National Bureau of Standards." This suggests that NBS is to be reimbursed for its work under the act. This authorization was only until 1978, and in later appropriation authorizations there was no mention of NBS.

FAIR PACKAGING AND LABELING ACT

Public Law No. 89-755, 80 Stat. 1296 (November 3, 1966)

The policy of the act is to prevent the use of unfair or deceptive methods of packaging or labeling of consumer commodities. Although NBS does not have authority to impose mandatory standards in this area, the act provides the Bureau with responsibility for: (1) preventing undue proliferation of packaging in the marketplace, §5(d), (2) assisting States to achieve uniformity in their regulations, §9(a), and (3) reporting to the Congress on the adequacy of voluntary standards imposed by manufacturers, packers, and distributors, §5(e).

The language of the act highlights the importance of NBS' role in working with standard-setting organizations, as authorized by section 2 of the organic act. Specifically, section 5(d) of the act states:

"(d) Whenever the Secretary of Commerce determines that there is undue proliferation of the weights, measures, or quantities in which any consumer commodity or reasonably comparable consumer commodities are being distributed in packages for sale at retail and such undue proliferation impairs the reasonable ability of consumers to make value comparisons with respect to such consumer commodity or

commodities, he shall request manufacturers, packers, and distributors of the commodity or commodities to participate in the development of a voluntary product standard for such commodity or commodities under the procedures for the development of voluntary products standards established by the Secretary pursuant to section 2 of the Act of March 3, 1901 (31 Stat. 1449, as amended; 15 U.S.C. 272). Such procedures shall provide adequate manufacturer, packer, distributor, and consumer representation."

There is no specific authorization of funds in this act.

TRADE AGREEMENTS ACT OF 1979

Public Law No. 96-39, 93 Stat. 144 (July 26, 1979)

The act establishes within Commerce a standards information center to serve as the central national collection facility for information relating to standards, certification systems, and international standards-related activities. §414. The Trade Agreements Act of 1979 Statement of Administrative Action states that the center "is to be housed at the National Bureau of Standards." H.R. Doc. No. 153, 96th Cong., 1st Sess. 481 (1979). The statement lists the functions of the center, which include: (1) serving as the inquiry point for requests for information on standards-related activities within the United States and (2) responding to questions from private persons, State agencies, or Federal agencies concerning standards-related activities of foreign signatories. Id. at 488-89.

There is no specific appropriations authorization to NBS.

The following statutes do not impose direct responsibility on NBS, but rather authorize NBS to provide support or consultative services to other Federal departments and agencies. It should be noted that although NBS already has this authority under the organic act, in these instances the Congress felt that measurement technologies are so important that it specifically included NBS (or Commerce) in the statutory language.

RESOURCE CONSERVATION AND RECOVERY ACT OF 1976
Public Law No. 94-580, 90 Stat. 2795 (October 21, 1976)

The act recognizes the importance of promoting the protection of health and the environment and conserving valuable energy and material resources. This will, in part, be accomplished through solid waste disposal practices including the economical use of recovered resources. NBS' responsibility under the act is to provide guidelines for specifications which will: (1) aid in conserving valuable material and energy resources, (2) increase the rate at which resource recovery from solid waste will occur, and (3) serve in the settlement of possible disputes involving the use of recyclables in items purchased by the Federal Government. In developing these guidelines, the act requires NBS to work in cooperation with standard-setting organizations and to hold public hearings. §5002. The act further encourages NBS to develop standard reference materials and data for recovered materials. §5001-02.

In this manner, the act confines NBS' authority to providing assistance to EPA and the producers and users of recovered energy and materials who are actually responsible for implementing technical specifications in this area. Section 2002(a) of the act restates NBS' responsibility of assisting EPA in its mission:

"In carrying out this act, the Administrator is authorized to-

"* * * utilize the information, facilities, personnel and other resources of Federal agencies, including the National Bureau of Standards and the National Bureau of the Census, on a reimbursable basis, to perform research and analyses and conduct studies and investigations related to resource recovery and conservation and to otherwise carry out the Administrator's functions under this Act."

This section makes clear that NBS work is to be done on a reimbursable basis.

EARTHQUAKE HAZARDS REDUCTION ACT OF 1977
Public Law No. 95-124, 91 Stat. 1098 (October 7, 1977)

The act authorizes the President to establish an earthquake hazards reduction program. To implement the program,

the act requires the President to develop a plan which assigns responsibilities to Federal departments and agencies. Section 5(d) of the act states in part that "[I]n assigning the role and responsibility of Federal departments and agencies, * * * the President shall * * * include * * * the National Bureau of Standards." The implementation plan, developed under the authority of section 5(f) of the act, directs NBS to

"* * * work with the Department of Housing and Urban Development, other Federal agencies (particularly those performing research), the National Institute of Building Sciences, professional organizations, model code groups, and State and local building departments to assist them and coordinate where necessary in continuing the development and improvement of model science design provisions suitable for incorporation into local codes and practices" and conduct "research on performance criteria and supporting measurement technology for earthquake-resistant construction."

Executive guidelines indicate that agency funds for this program are to come from its annual appropriations.

NATIONAL ENERGY CONSERVATION POLICY ACT
Public Law No. 95-619, 92 Stat. 3206 (November 9, 1978)

To further the policy of conserving energy resources, the act requires DOE to consult with NBS as follows:

- DOE is required to consult with NBS in (1) establishing practical and effective methods for estimating and comparing the life cycle costs for Federal buildings and (2) developing and prescribing the procedures to be followed in applying and implementing these methods, §545.
- DOE is required to consult with NBS in establishing and publishing energy performance targets for Federal buildings, §546.
- DOE is required to consult with NBS in conducting a study of the potential applicability of the second law of thermodynamics in assessing the efficiency of industrial energy use, §683.

--DOE is required to consult with NBS on product and material standards in implementing residential energy conservation plans, §222.

--In promulgating rules on the context and implementation of residential energy conservation plans, DOE is to consult with NBS, §212.

The act further directs NBS to provide assistance to DOE in improving the energy efficiency of industrial equipment, including the development of test procedures. §441.

The appropriation authorization in this act is directed to DOE. §§223, 251. There is no discussion in the act of DOE's responsibility to transfer funds to NBS.

ENERGY CONSERVATION AND PRODUCTION ACT
Public Law No. 94-385, 90 Stat. 1125 (August 14, 1976)

NBS is responsible under the act for supporting DOE in the development and promulgation of performance standards for energy conservation in new buildings. §§304, 310.

Appliance Program

Section 161 of the act amends section 325 of the Energy Policy and Conservation Act, Public Law No. 94-163, by providing NBS with authority to support DOE in developing energy efficiency standards for consumer products.

There is no specific authorization of funding in this act.

SOLAR PHOTOVOLTAIC ENERGY RESEARCH, DEVELOPMENT AND
DEMONSTRATION ACT OF 1978
Public Law No. 95-590, 92 Stat. 2513 (November 4, 1978)

The only reference to NBS in the act is in the preamble, which states that NBS shall support DOE in carrying out an accelerated program of research, development, and demonstration of solar photovoltaic energy technologies. The specific role NBS is to play in the development of solar technologies is left unclear.

Section 15 indicates that DOE is required to transfer funds to NBS for its activities in this area, by stating that:

"There is hereby authorized to be appropriated to the Secretary, for the fiscal year ending September 30, 1979, \$125,000,000 * * * for transfer to such other agencies of the Federal Government as may be required to enable them to carry out their respective functions under this Act."

SOLAR HEATING AND COOLING DEMONSTRATION ACT OF 1974
Public Law No. 93-409, 88 Stat. 1069 (September 3, 1974)

NBS authority under the act is to support HUD in the development of performance criteria and standards for solar heating and cooling systems, components, and materials. The act defines NBS' responsibilities to include the support of HUD in the following activities:

- Developing interim and definitive performance criteria for solar heating and cooling systems to be used in residential and commercial buildings, §§5, 6, 8, 9.
- Monitoring and evaluating the performance of various solar heating and cooling systems used in demonstration projects, §11(a).
- Developing procedures whereby manufacturers can have their solar heating and cooling components and systems certified as meeting performance criteria, §8(3).
- Conducting special studies on building code constraints and incentives relating to the use of solar energy, §12(b).
- Disseminating information to promote the practical use of solar heating and cooling technologies, §12(a).
- Prescribing regulations under the act. §16.

Section 19(b) makes clear that NBS activities under the act are to be funded through HUD:

"There is hereby authorized to be appropriated to the Department of Housing and Urban Development for the fiscal year ending June 30, 1975, \$5,000,000, to remain available until expended. Any sums so appropriated shall be available (1) to carry out

the functions vested in the Secretary of Housing and Urban Development by this Act, and (2) for transfer to the Department of Defense, the National Bureau of Standards, and the General Services Administration to enable them to carry out their respective functions under this Act."

CONSUMER PRODUCT SAFETY ACT

Public Law No. 92-573, 86 Stat. 1207 (October 27, 1972)

Section 29(d) of the act states:

"The Commission shall, to the maximum extent practicable, utilize the resources and facilities of the National Bureau of Standards, on a reimbursable basis, to perform research and analyses related to risks of injury associated with consumer products (including fire and flammability risks), to develop test methods, to conduct studies and investigations, and to provide technical advice and assistance in connection with the functions of the Commission."

Section 32 of the act authorizes funds to the Consumer Product Safety Commission. Although there is no mention of NBS in this section, section 29(d) of the act states that NBS work is to be done on a reimbursable basis. By this language, the Congress has made clear how NBS work in this area is to be funded.

RADIATION CONTROL FOR HEALTH AND SAFETY ACT OF 1968

Public Law No. 90-602, 82 Stat. 1173 (October 18, 1968)

The act established an electronic product radiation control program designed to protect the public from radiation emissions. As part of this program, section 356(a)(6) directs the Secretary of Health, Education, and Welfare to "consult and maintain liaison with the Secretary of Commerce * * * and other appropriate Federal departments and agencies on (A) techniques, equipment, and programs for testing and evaluating electronic product radiation, and (B) the development of performance standards * * * to control such radiation emissions."

There is no specific authorization of funds for this program.

METRIC CONVERSION ACT OF 1975

Public Law No. 94-168, 89 Stat. 1007 (December 23, 1975)

The act establishes a United States Metric Board "to coordinate the voluntary conversion to the Metric System." §3. NBS authority under the act includes the interpretation and modification of the International System of Units, the metric system of measurement. §4(4). Indirectly, the act requires NBS to provide assistance to State and local weights and measures officials. Section 6(7) of the act directs the United States Metric Board to assist the public in becoming familiar with the metric system. This assistance is to be provided, in part, by "consultation by the Secretary of Commerce with the National Conference on Weights and Measures in order to assure that State and local weights and measures officials are (1) appropriately involved in metric conversion activities and (2) assisted in their efforts to bring about timely amendments to weights and measures laws." §6(7)(c).

NBS work in this area is funded under its annual appropriations.

"Brooks Act"

Public Law No. 89-306, 79 Stat. 1127 (October 30, 1965)

The act amends title 1 of the Federal Property and Administrative Services Act of 1949, as amended, authorizing NBS to provide agencies with scientific and technological advisory services relating to automatic data processing and related systems and to make appropriate recommendations to the President relating to the establishment of uniform Federal automatic data processing computer and related systems. §111(f).

There is no specific appropriations authorization in this act.

NOISE CONTROL ACT OF 1972

Public Law No. 92-574, 86 Stat. 1234 (October 27, 1972)

This act requires NBS to cooperate with EPA in developing improved methods and standards for measuring and monitoring noise. The act was amended by the Quiet Communities Act of 1978, Public Law No. 95-609, 92 Stat. 3079 (November 8, 1978). Under the amended act, NBS has no statutory

assignments. NBS, however, is continuing noise control research under its organic act authority.

There are a large number of statutes in which no mention is made of NBS. Under its organic act authority to provide support services to other governmental agencies, however, NBS has done work indirectly under many additional statutes. Following are a few examples of these "other agency" mandates under which NBS work in measurement science plays an important role.

PRIVACY ACT OF 1974

Public Law No. 93-579, 88 Stat. 1896 (December 31, 1974)

The act was enacted in part to safeguard individual privacy from the misuse of Federal records. NBS has no direct responsibilities under the act. Section 6, however, directs OMB to develop guidelines and regulations for implementing certain provisions of the act. Under this authority, OMB issued Circular A-108, July 1, 1975, which requires the Secretary of Commerce (NBS) to issue standards and guidelines on computer and data security.

MEDICAL DEVICE AMENDMENTS OF 1976

Public Law No. 94-295, 90 Stat. 539 (May 28, 1976)

Through these amendments to the Federal Food, Drug, and Cosmetic Act, FDA is authorized to prescribe, by regulation, good manufacturing practices for critical medical devices. In promulgating regulations, the act authorizes the Secretary of Health, Education, and Welfare to:

"(A) use personnel, facilities, and other technical support available in other Federal agencies,"

"(B) consult with other Federal agencies concerned with standard-setting and other nationally or internationally recognized standard-setting entities." §514(a)(5)

Following this provision, the implementing regulations require that "the calibration of all measurement equipment used in the quality control program related to critical devices shall be traceable to the National Bureau of Standards." NBS is authorized to provide these services by the organic act.

Other examples include:

Hazardous Materials Transportation Safety Act, Public Law No. 93-633, 88 Stat. 2156 (January 3, 1975).

Toxic Substances Control Act, Public Law No. 94-469, 90 Stat. 2003 (October 11, 1976).

Clean Air Act, Public Law No. 88-206, 77 Stat. 392 (December 17, 1963).

National Climate Program Act, Public Law No. 95-367, 92 Stat. 601 (September 17, 1978).



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

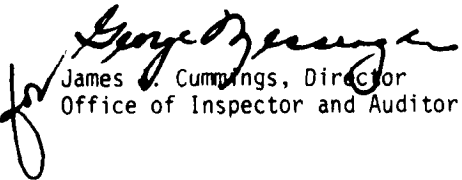
December 6, 1979

Mr. J. Dexter Peach, Director
Energy and Minerals Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Peach:

We appreciate the opportunity to comment on the draft GAO report entitled "National Bureau of Standards--Information for Use in Reauthorizing its Activities." Our comments are enclosed.

Sincerely,

for 
James W. Cummings, Director
Office of Inspector and Auditor

Enclosure:
As stated



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 WASHINGTON, D. C. 20555

DEC 5 1979

MEMORANDUM FOR: James J. Cummins, Director
 Office of Inspection and Auditor

THRU: Lee V. Gossick *LS*
 Executive Director for Operations

FROM: Robert B. Minoque, Director
 Office of Standards Development

SUBJECT: CAO DRAFT REPORT ENTITLED "NATIONAL BUREAU OF STANDARDS ---
 INFORMATION FOR USE IN REAUTHORIZING ITS ACTIVITIES"

The section of the GAO Draft Report that describes the funding status of the "Nuclear safeguards program" at the National Bureau of Standards is in basic agreement with NRC's understanding of the situation. We do find two paragraphs in the referenced section that require clarification with respect to NRC's position.

On the second page of the referenced section, the third paragraph, beginning "According to NBS, NRC discontinued its funding because", needs correction and amplification. Specifically, the NRC does not maintain, as stated in the paragraph, that "its responsibility for research is limited to the area of developing future regulations" The NRC does maintain that a Regulatory Agency should not directly fund a program whose major effort supports the regulated industry. In addition, because the Bureau's program, supported by NRC requires a considerable amount of direct interaction with our licensees, a conflict of interest situation easily can arise. Because of these considerations, the Commission made the decision to discontinue funding the NBS program in FY-1981.

The Commission has indicated its intent to encourage users of the Bureau's program to provide the funds previously supplied by NRC. Contrary to the contents of the last paragraph in the referenced section of the subject report, the Commission does not anticipate that the Bureau's program will be terminated with the subsequent waste of the monies already invested. We anticipate, instead, that DOE and the nuclear industry will provide the resources needed to complete the work.

Robert B. Minoque *12/2/79*
 Robert B. Minoque, Director
 Office of Standards Development

GAO note: Revisions as suggested have been made where appropriate.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PLANNING AND MANAGEMENT

Mr. Henry Eschwege
Director
General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

I appreciate the opportunity to comment on your draft report to the Senate Committee on Commerce, Technology, and Space concerning reauthorization of the activities of the National Bureau of Standards.

The National Bureau of Standards is a valuable technical resource available to all Federal Agencies. It provides expertise in physical science and measurement methodology, as well as providing essential testing services. It is unfortunate that the lead agency concept may have led to discontinuities in NBS programs.

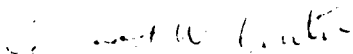
The lead agency concept is a good one and serves as a step forward in Federal program management. It provides for a balancing of national needs against limited resources and helps reduce overlap and unnecessary duplication of efforts. More directly related to NBS, EPA has historically recognized the value of NBS in the development of measurement methods and will continue to coordinate our efforts with them. Furthermore, we extend a great deal of joint NBS-EPA effort to assure traceability of EPA methods to NBS standards. Our experience in FY 79 has given EPA a heightened awareness of NBS capabilities and we shall continue to consider and use them as a source for our efforts to develop new, effective measurement methods and systems.

However, there is an error in the GAO report as it relates to EPA's Office of Monitoring and Technical Support program with NBS. The third page of Chapter Two indicates that EPA did not receive an increase in its FY 79 appropriation to cover the NBS program. For FY 79, EPA received an additional

\$1,000,000 in its appropriation for NBS work. An additional \$700,000 in carry over funds were added to this New Obligational Authority to provide a total NBS program amounting to \$1,700,000. In FY 80, EPA intends to provide \$2,000,000 in New Obligational Authority to NBS to continue this effort. This money has been earmarked for NBS from the beginning of the FY 80 planning cycle.

I believe we have addressed the main issues of the GAO report on NBS reauthorization and we appreciate the opportunity to provide such comments.

Sincerely yours,



William Drayton, Jr.
Assistant Administrator
for Planning and Management

GAO note: Revision as suggested has been made on p. 6 of this report.



Department of Energy
Washington, D.C. 20545

DEC 7 1979

Mr. Henry Eschwege
Director, Community and Economic
Development Division
General Accounting Office
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Eschwege:

COMMENTS ON GAO DRAFT REPORT, "NATIONAL BUREAU OF STANDARDS--INFORMATION FOR USE IN REAUTHORIZING ITS ACTIVITIES--CHAPTER 2"

On December 4, 1979, Mr. Jay Stewart of my staff met with Mr. Jack Glick of your office to provide Department of Energy, Office of Safeguards and Security (OSS) comments regarding the subject GAO report. In that OSS had inadequate time to prepare a formal, written reply for the December 4 meeting, I would like to take this opportunity to provide the following comments for GAO consideration. These comments address only pages 8-10 of the report, "Nuclear Safeguards Program".

In general, it is not clear that reduced NBS funding would, in and of itself, seriously undermine national safeguards policies and programs. We believe, for example, that the top paragraph, page 10, overstates the impact of such a funding reduction on DOE's ability to safeguard nuclear materials. Specifically, the notion that a reduction of NBS program funding "can result in a dangerous flaw in the Nation's nuclear safeguards program" or that the safeguards decision-making process "will be based on the shaky foundation of unvalidated data" are examples of such overstatements.

While we agree conceptually that the "slowing of the NBS effort is negatively affecting the Nation's ability to accurately measure nuclear fuels", those effects are not as severe as suggested and most definitely not the central element to our current ability to provide effective protection against threats of theft or sabotage. Statements to such an effect do not place the role of a standards program in the proper perspective and do not take into account the other compensating elements of the overall, integrated nuclear safeguards and security program.


It is also important to place the NBS contribution to the national safeguards research and development program in proper context. Certainly continued NBS participation in the national effort is highly desirable. Its loss as a source of national standards, which are used as the basis for special nuclear material (SNM) measurements, would require that an alternate and less acceptable source be established to meet national and international needs. We desire a continued NBS role and, in fact, by an October 29, 1979, letter to NBS (enclosed) indicated our interest in not only continuing support through FY 1981 but, also, our willingness to increase funding in light of NRC's election to terminate support. In spite of this valid and useful role, GAO should properly state in the report that NBS is but one of several DOE-funded organizations involved in the development of standards, measurement techniques, and other methods for assuring that SNM is adequately safeguarded. Regarding the evaluative methodology work, a number of national laboratories and private contractors have been working to develop such facility evaluation tools for a number of years. The GAO should, thus, exercise caution in describing the effect on the Nation's safeguards programs associated with a reduction in NBS funding.

In the first paragraph on page 9, it is stated that "the NBS program has not been funded as planned" and "the expected annual funding level of \$2.5 million has not been realized". The report notes fiscal year 1979 and 1980 funding shortfalls in an aggregate sense. OSS feels it would be helpful to indicate such shortfalls by sponsoring agency, which we believe will give a clearer picture of our support. As presently stated, it appears that all funding agencies have reneged on the 1977 agreement. Such has not been the case with respect to DOE.

The last sentence on page 9 indicates that "several activities which have been identified as key elements of nuclear safeguards have received no funding at all". There is no indication of what these activities might be or how they were identified as "key elements of nuclear safeguards". It would be appropriate to clarify and substantiate this statement.

In summary, we strongly support the NBS role in the Nation's safeguards research and development effort and recognize its numerous, valuable contributions. However, this effort must be viewed in the context of the entire breadth and scope of ongoing safeguards research and development activities. For objectivity, unnecessarily strong statements about the significance of this role should be avoided.

Sincerely,


George Weisz
Director
Office of Safeguards and Security

GAO note: The page numbers referred to in this letter do not correspond with the page numbers in this report. Revisions as suggested have been made where appropriate.



UNITED STATES DEPARTMENT OF COMMERCE
Office of Inspector General
Washington, D.C. 20230

OEC 14 879

Mr. Henry Eschwege
Director, Community and Economic
Development Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Eschwege:

This is in reply to your letter of November 16, 1979, re-
questing comments on the draft report entitled "National
Bureau of Standards -- Information For Use In Reauthorizing
Its Activities."

We have reviewed the enclosed comments and believe they are
responsive to the matters discussed in the report.

Sincerely,

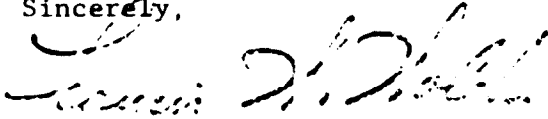
Mary P. Bass
Inspector General

Enclosure

-2-

problems confronting NBS in carrying out its mission. The revisions have been developed cooperatively by NBS and the Department.

Sincerely,



Francis W. Wolek
Acting Assistant Secretary
for Science and Technology

FW/lgd

Attachments



UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Science and Technology
Washington, D.C. 20230
(202) 377-3111

December 12, 1979

Mr. Henry Eschwege
Director, Community and Economic
Development Division
General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

Thank you for the opportunity to review and comment on a draft General Accounting Office report entitled, "National Bureau of Standards - Information for Use in Reauthorizing Its Activities." The report focuses on several important issues of concern to the Senate Committee on Science, Commerce and Transportation and its Subcommittee on Science, Technology and Space.

One such issue is the effects of the Administration's "lead agency" policy on the programs of the National Bureau of Standards (NBS). Since NBS is recognized as the central Federal agency for the development of reference measurements, methodologies, and standards, other Federal agencies often request NBS to develop, on a reimbursable basis, the reference measurements, methodologies and standards needed for their respective programs. The performance of work on a reimbursable basis rather than through direct appropriations is the very essence of the "lead agency" concept. One agency is given fiscal and management control over all elements necessary to accomplish a mission including that which needs to be performed by another agency such as NBS. Although I endorse the need for and desirability of the "lead agency" concept in principle, NBS does encounter difficulties with its implementation. Agencies sponsoring work at NBS sometimes alter their respective priorities causing the funding for NBS to be reduced or terminated altogether. Additionally, the magnitude of the level of support that one agency provides NBS for a particular project is generally not sufficient to be treated as a line item in that agency's budget request. Because of this, budget personnel of other agencies, when formulating their budget proposals are unaware that work NBS is performing for their agency is an integral part of that agency's overall program. We are currently working with the Office of Management and Budget in an effort to resolve this problem.

Attached are recommended changes to the draft report. These changes will clarify what, I feel, are misunderstandings and inaccuracies. I believe the changes are necessary to more closely portray the

Recommended Changes to Draft GAO Report on
National Bureau of Standards Information For Use in Reauthorizing its Activities

Page 3 paragraph 1 - Recommend that the paragraph be changed to reflect the September 30, 1979 actual employment by substituting "On September 30, 1979, the National Bureau of Standards (NBS) had 3,120 full-time permanent employees of which approximately 2,740 were at Gaithersburg, Maryland and 380 at Boulder, Colorado. The scientific staff including other than full-time permanent employees consisted of:

<u>Number</u>	<u>Degree Level</u>
622	Ph.D
308	Masters
427	Bachelors

Page 6 paragraph 2 - Description of the lead agency concept should more clearly indicate the Administration's intent to provide the lead or mission agency the authority and control over the resources and efforts for which it has responsibility.

Page 7 last paragraph - Recommend substituting the following for the last sentence of the paragraph. "As part of the OMB decision to remove the funding from the NBS budget, NBS understood that the Environmental Protection Agency (EPA) was, in turn, directed to provide the necessary support, on a reimbursable basis, for continuing NBS efforts in the development of standard reference measurements, methodologies, and materials needed by EPA to carry out its regulatory responsibility and ensure the ability of industry to comply with the regulations."

Page 8 paragraph 1 - Recommend substituting the following for the first three sentences, "In assessing their needs, EPA determined that some of the work at NBS needed to be refocused to insure the development of measurement methods that are of greatest urgency to meet EPA's regulatory needs. This resulted in the expansion or initiation of several efforts while others of lower priority to EPA were terminated. However, EPA did not receive the increases from the Congress that were requested by the President in support of the NBS program."

Page 9 Nuclear Safeguards Program - It is important to point out that this problem described in this section differs from the other examples of lead agency implementation problems. The Nuclear Regulatory Commission (NRC) and others have for two years provided a significant level of funding to the NBS program. The NRC now wants to unilaterally terminate the agreement in violation of the conditions of that agreement. It is also important to

note that as of the date of the draft report, NBS had not requested assistance from OMB in resolving this problem. The Department expects that with OMB's assistance, a resolution of the Nuclear Safeguards Program's funding will be reached prior to release of this report. We believe that if this item is to be included, a fuller explanation of the situation is needed.

Page 10 paragraph 1 - Recommend substituting the following paragraph for the one included in the report. "The severe curtailment of this program could affect the Nation's nuclear safeguards program because certain NBS standards and methodologies that would have been available for use in the nuclear materials accountability arena will not be developed. Without these standards and methodologies, the decision-making process for nuclear materials safeguards will be based on data which has not been validated against national standards. Finally, the investment of \$3.6 million by NCR to date will be less useful than it could be because the initial work will not be implemented in standards and methodologies."

Page 10 paragraph 2 - The citation for the Energy Policy and Conservation Act should be P.L. 94-163.

Page 12 paragraph 1 - Recommend that the following be substituted for the first three sentences of the paragraph, "In May of 1978, EPA and DOC established a interagency agreement delineating the responsibilities of each under the legislation. The Congress also provided authorization for appropriation for this program at NBS in P.L. 94-580. OMB recommended \$3,122,000 for this program in the 1980 President's budget. NBS had previously reprogrammed approximately \$1 million of funds during 1979."

Also, Recommended that the end of the last sentence be revised to read "...begin 2½ years after enactment."

Page 13 paragraph 1 - Recommend that the description of the negative impacts of the implementation of the lead agency concept be balanced with a description of OMB's commitment toward the building of competence at NBS. Suggest the following as the last lines of the section: "However, it is noted that OMB established a competence fund at NBS in 1979 intended to enhance the capability of NBS to respond to the needs of other agencies requiring the services of NBS in meeting their respective objectives. NBS was further directed to reprogram from within their base level of resources similar amounts to the competence fund to enhance their capability for meeting NBS - specific objectives. This fund is to be used for the development and upgrading of the various scientific and technical disciplines necessary for the performance of NBS work." These funds are not to offset the costs of performing other agency work, but to improve the NBS capability to perform the necessary support.

Page 16 paragraph 4 - The Department believes the recommendation will not accomplish the purpose intended by GAO. Changing the word "authorized" in the NBS Organic Act to the word "shall" would not affect statutory authorities of other Departments and agencies making those agencies responsible for the conduct of a mission. Even if Congress in another agency's legislation clearly directs the Secretary of Commerce through the Bureau of Standards to perform a particular task comprising part of that other agency's overall mission, appropriations for the task must be authorized to the Secretary, the President's budget must request such appropriations, and the Congress must actually appropriate the monies.

We suggest that GAO revise its recommendation in accordance with the above.

Page 23 Recommend that the following substitutions be made:

First paragraph be replaced with:

"The Assistant Secretary for Science and Technology directed NBS to develop a plan to refocus its base program funding levels in order to accommodate new high priority work. Since the Department was attempting to propose a budget within the President's fiscal policies, it was necessary to focus resources available within those policies to the highest priority programs.

Second paragraph be replaced with:

"NBS and Commerce officials felt that although the programs selected for curtailment or termination were viable, they were of a lower priority and lesser urgency when compared to proposed new programs. Additionally, it was felt that most of these projects had matured to a point where further research, if necessary, could be picked up by other institutions."

In the third paragraph substitute "terminated" for "reprogramming" as the seventh word of the fifth line.

GAO note: The page numbers referred to in the attachments do not correspond with the page numbers in this report. Certain revisions were made where appropriate. We rechecked the data supporting our disclosures and in some instances made no change because the Department of Commerce's information was not supported by factual data. For example, the employment figures furnished by Commerce differ from those appearing on the NBS computer run which we used in the report. Another example is that the comments received from EPA negated the Department of Commerce's comments regarding this agency. In general, many of the comments furnished were minor or editorial in nature, which did not require us to make any substantive changes to the report.



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

DEC 25 1979

Mr. Allen R. Voss
Director, General Government Division
General Accounting Office
Washington, D.C. 20548

Dear Mr. Voss:

This letter responds to your request for comments on Chapter 2 of the draft proposed report, "National Bureau of Standards--Information for use in Reauthorizing its Activities." Our comments address the general concept of a lead agency, the specific examples which you have used in your report, and the recommendations made to OMB and the Congress.

Lead Agency Concept

First, some clarification should be made of the term "lead agency." We have applied this term to agencies and Departments that are commonly considered mission agencies, such as the Departments of Transportation, Housing and Urban Development, and Defense. While NBS' "mission" could be said to be in the field of measurement science its activities are divided between those of general applicability (in which NBS does have the lead) and those of specific applicability (where the agency with the specific program has the lead). Therefore, although NBS is the "lead agency" in general measurement science, it is not the "lead agency" when it comes to applying that science to projects in other agencies: it is a supporting agency.

In addition to the points raised in the report, the lead agency policy serves two important functions:

1. it encourages the mission agencies to give more thought to their long-range research needs and to work closely with NBS to identify and meet those needs; and
2. it enables NBS to concentrate its directly appropriated funds on basic research in metrology and on the development of the underlying data base which can then be applied to meet other agencies' needs. OMB has supported this work by funding a base program in various measurement areas and by approving establishment of a "competence fund" which NBS uses to do fundamental research in areas where there is a foreseeable demand for their scientific expertise in the future. While

the primary purpose of this fund is to allow NBS to remain at the forefront of scientific research, the fund has the secondary effect of enhancing NBS' capability to respond to the mandates of the Congress and to the needs of other agencies.

One final point should be made with respect to this general concept. The draft states (pg. 6) that OMB has adopted the policy that an agency should be the "exclusive" source of support for its mission. It would be more accurate to say that the lead agency should be the principal or primary source of support.

Specific Examples of the Lead Agency Concept

The application of the lead agency funding policy has worked quite well in a number of cases, none of which have been cited in the draft report. Solar energy research and consumer product safety work are two areas. With respect to the examples described in the report, we have the following specific comments.

° Environmental measurements program

It is clear from the discussion of this program, and from our conversations with EPA officials, that no one from EPA was consulted in the preparation of this section of the report. The material reflects no knowledge of EPA's position on a policy matter in which they obviously have an important interest. We find that the omission of this agency's views in the discussion of the interagency agreement has resulted in several factual errors in the report.

First, during the first year of implementation, OMB worked closely with both EPA and NBS to assure that the research program that was agreed upon would meet the needs of EPA while providing some measure of continuity to NBS' existing program. The statement indicating that EPA's requirements "provided no consideration for ongoing programs at NBS to develop fundamental understanding, analytical methods, and reference samples for environmental measurements" does not acknowledge the fact that the final program that was agreed upon provided for continuation of much of NBS' ongoing work. Nor does it acknowledge the fact that EPA ultimately provided NBS with \$1.7M in FY 1979 to conduct the agreed upon program.

Secondly, the report states that "starting with the fiscal year 1979 budget, essentially all of the NBS direct funding for environmental support was removed by OMB from the NBS budget." This statement ignores the fact that the President's budget has

included funding for NBS which would maintain a basic competence in the environmental measurements area, thereby enabling NBS to respond on a reimbursable basis to requests for assistance from EPA and other agencies.

Finally, while we acknowledge that some "dislocation" of NBS work occurred in 1979 as a result of the delay in funding, we would also point out that this was the first year of implementation of a new policy. Some disruption can be expected initially, but we would argue that, in the longer range view, the lead agency policy will provide a more effective means of establishing research priorities in the environmental area.

Appliance labeling program

As GAU points out, the appliance labeling program was made mandatory by legislation which directed the Federal Energy Administration to have work performed by NBS. The Congress gave the Federal Energy Administration overall responsibility for this effort, and authorized FEA to transfer funding to NBS for its work. While separate funding was not requested directly for NBS in the President's budget for 1978, the necessary funds were requested as part of the Federal Energy Administration budget as authorized by the Energy Policy and Conservation Act (P.L. 94-163). The necessary positions were reallocated within NBS to perform this work on a reimbursable basis.

Resource recovery program

The question of funding for the resource recovery program is also only partly related to the lead agency concept. Throughout the development of program plans for implementation of the Resource Recovery and Conservation Act, OMB has been concerned that all agencies with responsibilities under the Act coordinate their activities to develop programs that are complementary and not duplicative. Funding for NBS was initially denied, therefore, not on the basis of lead agency responsibility but because of the lack of a Government-wide, coordinated approach to the resource recovery issue. NBS' 1979 reprogramming request was allowed by OMB and direct NBS funding of \$3.1M for the resource recovery program was requested as part of the President's budget in 1980. Thus, implementation of the NBS program began about 2 1/2 years, rather than 4 years, after passage of the law.

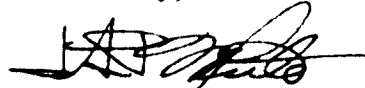
Recommendation to OMB

OMB recognizes the problems associated with the lead agency policy and we are making ongoing efforts to clarify the appropriate NBS role in various measurement programs. We will continue to interact closely with NBS and other agency officials to see that program decisions and funding allocations are made on an equitable basis. However, it is not clear that interagency meetings are best held when the budget request is under review, particularly when small amounts of funding are involved. Rather, we would encourage NBS and the agencies involved to work out a program before the budget process at OMB is underway and to establish interagency long-range agreements which will ensure both that the lead agency's needs are met and that NBS can expect some continuity in its programs.

Recommendation to the Congress

We are concerned by the recommendation to the Congress that the NBS Organic Act be amended to read "shall" or "will" for authorizing certain NBS activities. This could cause confusion within NBS' current programs and possible duplication with other agency activities. While it may be appropriate to take such action in the authorization of new programs or responsibilities, we would not support changes in the Organic Act at this time.

Sincerely,



John P. White
Deputy Director

GAO note: The page numbers referred to in the letter do not correspond with the page numbers in the report. Revisions as suggested have been made where appropriate, including the comments furnished by EPA. OMB's comments on GAO's proposed recommendations are discussed on pp. 13 and 14 of the report.

(066020)

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