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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

ENERGY AND MINERALS
DIVISION

JUNE 24, 1981

B-200868

The Honorable James B. Edwards
The Secretary of Energy

Subject: Improvements Needed in DOE's Efforts to Disseminate Solar Information (EMD-81-101)

Dear Mr. Secretary:

The General Accounting Office has recently completed a review of the Department of Energy's (DOE's) efforts to disseminate information on solar energy technologies. Since 1979, DOE has been operating a national solar information network 1/ comprised of various DOE funded organizations which disseminate solar information. Although some of the guiding principles in establishing this network were to eliminate overlapping services, user frustration and confusion, and duplication of effort, we found that these problems still exist. Specifically, we found (1) overlapping and duplicative inquiry and referral services, (2) indications that the network is confusing the public and those charged with disseminating solar information, and (3) duplication of data base information.

In addition to the national solar information network, there are other DOE organizations which, as part of their broad information activities, disseminate information on solar energy technologies. The solar information dissemination activities of these other organizations can further contribute to the problems stated above.

1/This network is sometimes referred to as the Solar Energy Information Data Bank (SEIDB). The network participants include the Solar Energy Research Institute, the four Regional Solar Energy Centers, and the National Solar Heating and Cooling Information Center.

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Accordingly, we recommend that you

--consolidate, where possible, the inquiry and referral services of DOE organizations which disseminate solar energy information, and

--merge DOE's solar data bases so that duplicative information is eliminated.

In addition, we recommend that you require that DOE organizations involved in disseminating solar information keep complete and uniform records on the volume and type of solar information disseminated so that DOE management can monitor and evaluate such activities to ensure that future overlapping and duplicative services do not occur.

We discussed the matters contained in a draft of this report with DOE officials responsible for solar information dissemination activities. They generally agreed with our findings and conclusions, but pointed out that they recently initiated actions which they believe will resolve some of the problems identified in the report.

Our review was conducted primarily at DOE headquarters in Washington, D.C.; the Solar Energy Research Institute (SERI) at Golden, Colorado; two of the four Regional Solar Energy Centers (RSECs); 1/ and the National Solar Heating and Cooling Information Center (NSHCIC) at Philadelphia, Pennsylvania. We also contacted the other two RSECs to obtain records on their solar information dissemination activities. We examined the available records of these network participants on the extent and type of solar information disseminated and how they respond to specific inquiries. We also contacted other DOE organizations, which as part of their broader responsibilities disseminate solar information, to determine what information they disseminate and how they interface with the network participants. These other organizations include DOE's Technical Information Center (TIC), Office of Public Affairs, and 10 Regional Energy Information Centers. Finally, we contacted various solar program officials and solar industry

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1/The RSECs we visited are located at Boston, Massachusetts and Atlanta, Georgia. The other two RSECs are located at Minneapolis, Minnesota and Portland, Oregon.

representatives to gain their perspective on DOE efforts to disseminate solar information.

During our review we noted some DOE organizations were routinely disseminating lengthy and expensive solar information documents free to the public, even though some of these documents were being sold by other Government agencies such as the National Technical Information Service or the U.S. Government Printing Office. We discussed in detail this matter with DOE officials involved in disseminating solar information. These officials subsequently informed us that as a result of our work, DOE has begun charging for certain solar information products and services and plans to implement a charging policy on a uniform basis by the end of fiscal year 1981. Consequently, we are not addressing the matter further in this report.

BACKGROUND

The Solar Energy Research, Development, and Demonstration Act of 1974 (P.L. 93-473, Oct. 26, 1974) contained important provisions authorizing the dissemination of information on solar energy technologies. Under this act, DOE has responsibilities to compile and disseminate information and data on

--technical information on solar energy research, development, and applications;

--technical information on the design, construction, and maintenance of equipment using solar energy;

--general information on solar energy applications;

--physical and chemical properties of material required for solar energy activities and equipment; and

--engineering performance data on equipment and devices using solar energy.

Partly to meet the requirements of the act and partly to meet its own informational needs, the former Energy Research and Development Administration (ERDA) and its successor agency, DOE, established and funded a number of organizations. In March 1977, DOE initiated actions to establish SERI and the RSECs. DOE subsequently designated SERI the lead organization for solar research, development, and demonstration and gave it

responsibilities to disseminate solar information nationwide. DOE designated the RSECs as lead organizations for solar commercialization. They were to disseminate information on solar technologies close to commercialization within their respective regions. DOE also funded NSHCIC 1/ to disseminate solar heating and cooling information nationwide.

In addition to SERI, the RSECs, and NSHCIC, various other DOE organizations, as part of their broad information activities, disseminate information on solar energy. These organizations include DOE's TIC, Office of Public Affairs, and 10 Regional Energy Information Centers. TIC is responsible for handling all reports resulting from DOE programs. As part of its responsibilities, TIC disseminates reports and studies resulting from DOE supported solar energy research, development, and demonstrations. The Office of Public Affairs distributes pamphlets and booklets on a wide variety of energy topics including solar. DOE's 10 Regional Energy Information Centers disseminate energy information including solar information developed by various DOE sources.

Finally, some of DOE's solar program offices routinely disseminate information on their respective programs to the public. For example, DOE's office of biomass energy programs responds to about 400 public requests per month.

In 1979, DOE and SERI began operating a national solar information network. This network is a cooperative undertaking among SERI, the RSECs, and NSHCIC. Together, they are intended to serve most of the solar information needs of the general public, research community, and solar industry. Their two primary information dissemination activities are (1) inquiry and referral services to provide general, as well as specific, solar information to the public upon request and (2) data base activities to make available to the solar industry, researchers, and Government officials comprehensive information on a wide range of solar energy topics. In addition, these organizations sponsor outreach activities such as workshops, seminars, and exhibits.

1/NSHCIC was established in May 1976, by the Department of Housing and Urban Development to meet the growing number of public requests the Federal Government was receiving for information on solar heating systems for homes and other buildings.

In fiscal year 1980, DOE funded about $18 million to SERI, the RSECs, and NSHCIC to carry out their solar information dissemination activities and in fiscal year 1981 expects to fund $11.5 million. In the President's fiscal year 1982 budget proposal, DOE requested $6.7 million for the network's solar information activities. According to DOE officials, this funding level will eliminate much of the outreach activities of SERI and NSHCIC but will have little impact on their inquiry and referral services and data base activities.

The guiding principles in establishing the network were to eliminate overlapping services and duplication of effort, minimize jurisdictional conflicts among organizations which disseminate solar information, avoid user frustration and confusion, and ensure that network-wide standards are centrally developed and promulgated. SERI has been designated the lead organization in pulling together this network and is responsible for coordinating the network functions with other DOE organizations which also disseminate solar information.

IMPEDIMENTS TO THE NETWORK'S EFFICIENCY

Although DOE and SERI have attempted to better coordinate the efforts of the network participants, problems impeding the network's efficiency still exist. Specifically, we noted that (1) overlapping and duplicative inquiry and referral services still exist, (2) the network is confusing the public and those charged with disseminating solar information, and (3) duplication remains among data base information.

Overlapping and duplicative inquiry and referral services

By nature of the information dissemination responsibilities given to SERI, the RSECs, and NSHCIC, there is overlap. For example, each of these network participants have responsibility for disseminating information on solar heating systems. The RSECs can disseminate information on solar heating systems because these systems are at or near commercialization. NSHCIC, because of its charter to provide solar heating and cooling information, can also provide information on solar heating systems. Similarly, SERI can distribute information on solar heating systems under its charter to disseminate information on solar technologies.

In practice, such overlapping responsibilities have resulted in SERI, the RSECs, and NSHCIC each responding to similar information requests from the public with basically the same information. For example, each of these network participants routinely respond to general solar information requests from the public regardless of locality and provide many of the same documents. Similarly, most of these network participants routinely respond to requests for solar heating information with each providing much of the same information. The total extent of such overlap is difficult to quantify because records on the information disseminated by these network participants are not complete or uniformly kept. However, our examination of available records and services provided indicates that the overlap could be extensive. In fiscal year 1980, 73 percent of the 11,845 information requests serviced by one RSEC related to general solar and solar heating information. NSHCIC, which has been responding to general solar and solar heating information requests since 1976, responded to 183,000 requests in its fiscal year 1980. In our view, 73 percent of the RSEC's inquiry and referral service overlapped NSHCIC's efforts to provide inquiry and referral service for general solar and solar heating and cooling information.

Overlap in inquiry and referral services could result in duplication of services and inefficiencies especially when those seeking solar information receive duplicate copies of brochures, pamphlets, or other publications. This is likely because SERI, the RSECs, and NSHCIC often, in responding to a request, refer their inquirers to other sources including each other for additional information. For example, NSHCIC issues solar source sheets, along with its informational response, which refer inquirers to additional information sources including the RSECs and SERI. An individual seeking solar information from the three sources--SERI, the RSECs, and NSHCIC--could receive duplicate copies of solar publications. In testing the likelihood of this situation, we requested SERI, the RSECs, and NSHCIC to provide us with information they would routinely send to the public on six solar energy technologies. A substantial amount of publications we received were duplicative. For instance, of the 14 pieces of general solar publications we received from one RSEC, half of them were publications produced and distributed by NSHCIC. Further, in discussing the matter with the Acting Manager of Information and Education Services of another RSEC, he informed us that virtually all of the

information that RSEC disseminates are publications produced and distributed by SERI and NSHCIC.

While we did not review in detail the information dissemination activities of other DOE organizations, we believe the issue of overlap and duplication can be further compounded by these numerous other organizations which also provide solar information. For example, DOE's TIC, Office of Public Affairs, and DOE's 10 Regional Energy Information Centers routinely disseminate similar solar information to the public that SERI, the RSECs, and NSHCIC are disseminating. Since these other sources also refer their inquirers to SERI, the RSECs, and/or NSHCIC as additional information sources, further duplication can occur.

DOE and network officials have recognized that overlap and duplication exist in the network's inquiry and referral services and have taken steps to correct this situation. For example, in March 1980, SERI initiated actions to forward solar heating requests to NSHCIC. In addition, SERI officials had agreed in October 1980 to coordinate their services with TIC to avoid disseminating the same technical documents. However, more needs to be done. Our review has shown that overlapping and duplicative services still exist.

Network confusing to the public and those charged with disseminating solar information

In addition to overlapping inquiry and referral services, DOE's solar information dissemination network appears to be confusing the public and those charged with disseminating the information. We found indications that people do not know the appropriate place to obtain specific solar information. DOE has established a network to disseminate solar information, but has not designated which network participant should act as a first stop for public inquiries. Thus, a person seeking information on solar energy systems can sometimes face a long and confusing task. Even DOE officials, at times, seem confused by its network because they occasionally forward requests to the wrong entity for response.

In reviewing the type of information requests SERI, the RSECs, and NSHCIC receive, we noted instances where the public was requesting information from the "wrong" entity. For example, NSHCIC, which is responsible for disseminating information on solar heating and cooling, receives public requests

for information on solar energy technologies not related to solar heating and cooling such as wind, photovoltaics, and biomass. Even DOE officials forwarded public inquiries for information not related to solar heating and cooling to NSHCIC for handling. RSEC officials said that they commonly receive requests for solar information that do not relate to commercialization such as questions on solar research and development projects. When an organization receives a request it cannot handle, the request is usually forwarded to the appropriate organization. This can cause delays especially with written requests. According to a NSHCIC official, delays can be as long as a month before the requestor gets a response.

We also noted that a request can be forwarded from one organization to another in DOE without the requestor receiving a response. For example, in one case we requested specific information on a solar technology and were told to contact another organization which, in turn, told us to contact a third organization which suggested we contact the organization we first approached.

Solar industry representatives we contacted expressed concern that the network and DOE's numerous other organizations that disseminate solar information are confusing the public. One common complaint by these representatives was that they believe the public sometimes gets the run-around from DOE when trying to obtain solar information. These industry representatives informed us that they occasionally receive calls from a confused and frustrated public trying to obtain solar information. Many people, according to these representatives, do not know where to go to obtain the most appropriate information.

Duplication of data base information

An important activity within DOE's overall efforts to disseminate solar information is to develop a comprehensive set of data bases. These data bases are intended to provide the growing community of solar researchers and industry representatives, as well as Government officials, easy access to data on current solar research, solar products and manufacturers, demonstrations, key events, and human and institutional resources. Our review of DOE's efforts to develop and make available such data bases shows that although DOE has taken some steps to eliminate duplication among its data bases, some

duplication remains. Such duplication can result in additional costs to the Government.

Many DOE funded organizations have developed and are maintaining data bases for solar energy. NSHCIC developed seven data bases for solar heating and cooling topics and SERI developed 10 data bases for all solar technologies. DOE's TIC developed a solar bibliography data base.

Various information contained in the data bases are duplicative. For example, most of the solar manufacturers listed in NSHCIC's data base are duplicated in SERI's solar manufacturers data base. Similarly, most of NSHCIC's data base on solar legislation is duplicated in SERI's data base on solar legislation. In addition to the duplicative data bases between NSHCIC and SERI, we also found, during our review, that SERI's and TIC's bibliographic data bases were duplicative. In this regard, SERI officials agree that virtually all of SERI's data base is contained in TIC's data base.

Such duplication among the various data bases can result in additional costs to the Government. Once a data base has been developed, it must be maintained. Such maintenance includes a periodic update and validation of data. According to SERI records and NSHCIC officials, these costs can range anywhere from $20,000 to $80,000 a year for a single data base.

DOE officials have recognized that duplicative information in data bases exists. They pointed out that they eliminated SERI's bibliographic data base in March 1981. They realize, however, that more could be done and savings realized by eliminating duplication that still exists.

CONCLUSIONS

DOE has been funding a number of organizations to disseminate information on solar energy technologies. The most significant of these organizations are SERI, the RSECs, and NSHCIC. In addition, there are various other DOE organizations which, as part of their broad information activities, disseminate solar information. These include DOE's TIC, Office of Public Affairs, and the 10 Regional Energy Information Centers. In 1979, DOE constructed a national solar information network comprised of SERI, NSHCIC, and the RSECs in an effort to pull together and better coordinate the activities of some of the organizations that disseminate solar information.

Although some of the guiding principles in establishing the network were to eliminate overlapping services, user frustration and confusion, and duplication of effort, we found that these problems still exist. These problems are preventing the network from operating in the most efficient manner. To be more efficient, overlapping and duplicative inquiry and referral services and duplication of data base information need to be eliminated. Although we recognize that some overlap and duplication may be inevitable, the amount of overlap and duplication that presently exists in the network, coupled with the confusion we identified, suggests that the network could be better structured. In addition, integration of the activities of other DOE organizations disseminating solar information needs to be considered in better structuring the network.

DOE needs to consolidate the inquiry and referral activities of DOE organizations which disseminate solar information. Such a consolidation should focus on minimizing overlapping and duplicative services and reducing user frustration and confusion. In addition, DOE needs to merge its solar data bases to eliminate the duplicative information in these data bases.

Further, throughout our review, we noted that records on the extent and type of information disseminated were not consistently kept at the various DOE organizations which disseminate solar information. In order for DOE management to more closely monitor the activities of these organizations to ensure that future overlapping and duplicative services do not occur, it must have ready access to such records. Accordingly, we believe that DOE should require the organizations that disseminate solar information keep complete and uniform records on the information disseminated so that DOE management can monitor and evaluate their activities.

RECOMMENDATIONS TO THE SECRETARY OF ENERGY

To ensure that DOE's efforts to disseminate solar information are carried out in the most efficient manner, we recommend that you

- consolidate, where possible, the inquiry and referral services of DOE organizations which disseminate solar energy information to minimize overlapping and duplicative services, and

--merge DOE solar data bases so that duplicative information is eliminated.

In addition, we recommend that you require that DOE organizations involved in disseminating solar information keep complete and uniform records on the volume and type of solar information disseminated so that DOE management can monitor and evaluate such activities to ensure that future overlapping and duplicative services do not occur.

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As you know, section 236 of the Legislative Reorganization Act of 1979 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Operations not later than 60 days after the date of the report, and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We discussed the matters contained in a draft of this report with DOE officials responsible for solar information dissemination activities. They generally agreed with our findings and conclusions, and informed us that they recently initiated actions which they believe will resolve some of the problems identified in the report. Specifically, they pointed out that (1) in late May 1981, they took steps aimed at consolidating the solar inquiry and referral services within NSHCIC and changed its name to the National Solar Information Center, and (2) in April 1981, they approved a plan which, in part, limits the network's data base activities within SERI in an effort to eliminate duplication of data base information.

Copies of this report are being sent to the Director, Office of Management and Budget, interested committees and Members of Congress, and others. We appreciate the courtesy

and cooperation extended to our staff during the review and would appreciate being informed on the actions you take on our recommendations.

Sincerely yours,

J. Dexter Peach
Director