

## The National Critical Materials Act

*Call for MRS Involvement in New Council Designated as National Watchdog of Materials Research Activities*

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**P**rofound acknowledgment of the importance of materials research to the well-being of society has recently been provided by the government of the United States of America in the form of Public Law 98-373: National Critical Materials Act of 1984. This law provides for the establishment of a National Critical Materials Council within the Executive Office of the President that is responsible for coordination of the government's materials-related policies, programs, and research and technology activities. This new legislation, the major features of which are reproduced on the next page in this issue of the **BULLETIN**, promises to touch all of us in some way during the coming years.

The law establishes a National Critical Materials Council consisting of three presidential appointees who are qualified in materials policy or materials science and engineering. The Council is primarily responsible for the formulation of national materials policies consistent with other Federal policies. This activity includes establishing responsibilities for programs and priorities for materials activities in each Federal department or agency. The Council will also review materials programs and activities of the government for consistency with the National Materials and Minerals Policy Research and Development Act of 1980. It will monitor the critical needs of both industry and government, and it will advise the President of world trends and their implications for national and world economy and national security.

The Council will also assess the adequacy of the materials-related educational enterprise. Finally, the Council will provide a domestic inventory of critical materials, project the needs of government and industry for them, and work with the Office of Science and Technology Policy and others to develop a long-range assessment of prospective major problems. The first such report is due on April 1, 1985 and is to be followed by updates at least biennially. Finally, the Council will recommend to Congress the changes in policy, regulation, and legislation that might be required.

This summary of Section 204(a) of P. L. 98-373 makes clear that the responsibilities of the Council are broad. Essentially all of the many agencies whose missions involve materials procurement, development, and application are subject to review by the Council. The Council is given the authority to establish advisory panels to assist it in its work, and to convene Federal interagency committees as necessary. It is also decreed in the legislation that the Council shall work with and obtain assistance from the National Security Council, the Council on Environmental Quality, the Office of Management and Budget, and the Office of Science and Technology Policy.

Indeed, the responsibilities of the Council are so vast that such collaboration will be essential. The relationship of the Council to existing bodies will require definition. How, for example, will the activities of the Council relate to the responsibilities of COMAT, the Committee on Materials within the Office of Science and Technology Policy? How will the Council's work on academic research and education impact the mission of the National Science Foundation? These and a host of similar questions will undoubtedly arise during the first phase of Council activity.

The Council's mandate regarding advanced materials research is clearly specified in Section 205 of the law. It is this activity that will most certainly be visible to members of the Materials Research Society. Basically, the Council is to coordinate the materials research policies and programs of the entire government, and ensure that they are consistent with the policies and goals of the National Materials and Minerals Policy, Research, and Development Act of 1980. To effect this coordination, the Council will formulate a national plan for materials research and provide Congress with an annual review of the plan. This plan will be important. The law instructs the Office of Management and Budget to regard the authorization requests of all of the various Federal departments and agencies as an integrated, multiagency request, and to make certain that it adheres to the Council's plan.

Simply put, the reduction by OMB of requests that adhere to the plan will be made more difficult, while the rejection of nonconforming requests will be made easy. In formulating the plan, the Council will review the materials research and development requests of all Federal agencies and departments. The Council will, in formulating the plan, "recommend the designation of key responsibilities" for carrying out the research called for in the plan. Such designations would presumably divide the key elements of the plan among various agencies and departments, but could conceivably designate "lead" laboratories in given areas of the planned activity.

Finally, Section 206 of the law calls upon the Council to evaluate the establishment of Centers for Industrial Technology, which had been provided for in previous legislation. These Centers would focus on such areas as corrosion, welding and joining, advanced processing and fabrication technology, microfabrication, and fracture and fatigue. Also in Section 206, the Council is directed to establish an effective mechanism for disseminating materials property data, perhaps by means of a computerized system that would use existing resources.

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The work of the Council would be coordinated by no more than a dozen paid employees reporting to an executive director.

The National Critical Materials Act of 1984 was signed by President Reagan on July 31, 1984. It first came under consideration of Congress in June 1983, and developed its present form by means of the legislative process in less than one calendar year. It establishes a governmental body with profound authority to oversee the whole of materials research, and to probe the future needs of both government and industry. That this law recognizes the importance of materials research is, of course, not surprising to members of MRS, whose professional activities bring them frequent examples of the value of their work. The ability to understand, control, refine, and improve the properties of materials is central to technology, and underlies progress in many fields. It is for this reason that a remarkably diverse collection of governmental agencies have instituted materials research programs that address their needs. The enormous vitality of materials research derives in turn from the wide variety of needs represented by today's science and technology. Thus, while the importance of a vital materials research enterprise is of unquestioned value, the paths between research and technological progress are multiply connected and complex. Management

priorities for materials research is consequently difficult, and this new legislation aims to bring order to this complicated area.

This new law is, in essence, a call for priorities from a government that recognizes the great potency of materials research, and wishes to thoughtfully and carefully spend its effort in this area. The task set before the new Council is awesome. Although the potential for success is large, the possibility that fruitful programs will be disrupted and ill-conceived programs be initiated is present and presents a clear danger. The Council will certainly need the thoughtful assistance of the materials research community to perform its task well, and MRS members should prepare to respond with vigor and prudent judgment when service to the Council is requested.

In anticipation of the possibility that the MRS might, as a society, be able to offer service to this and other public bodies, the MRS Council voted in Boston to establish an External Affairs Committee that will explore ways in which the unique professional insights represented by the Society's membership can be made accessible. While MRS represents a portion of the materials world, the Society should be prepared to represent, when requested, those aspects of materials research in which its membership is expert. **MRS**

## Public Law 98:373: Title II— National Critical Materials Act of 1984

### ESTABLISHMENT OF THE NATIONAL CRITICAL MATERIALS COUNCIL

Sec. 203. There is hereby established a National Critical Materials Council (hereinafter referred to as the "Council") under and reporting to the Executive Office of the President. The Council shall be composed of three members who shall be appointed by the President and who shall serve at the pleasure of the President. Members so appointed who are not already Senate-confirmed officers of the Government shall be appointed by and with the advice and consent of the Senate. The President shall designate one of the members to serve as Chairman. Each member shall be a person who, as a result of training, experience, and achievement, is qualified to carry out the duties and functions of the Council, with particular emphasis placed on fields relating to materials policy or materials science and engineering. In addition, at least one of the members shall have a background in and understanding of environmentally related issues.

### RESPONSIBILITIES AND AUTHORITIES OF THE COUNCIL

Sec. 204. (a) It shall be the primary responsibility of the Council—

(1) to assist and advise the President in establishing coherent national materials policies consistent with other Federal policies, and making recommendations necessary to implement such policies;

(2) to assist in establishing responsibilities for, and to coordinate, Federal materials-related policies, programs, and research and technology activities, as well as recommending to the Office of Management and Budget budget priorities for materials activities in each of the Federal departments and agencies;

(3) to review and appraise the various programs and activities of the Federal Government in accordance with the policy and directions given in the National Materials and Minerals Policy, Research and Development Act of 1980 (30 U.S.C. 1601), and to determine the extent to which such programs and activities are contributing to the achievement of such policy and directions;

(4) to monitor and evaluate the critical materials needs of basic and advanced technology industries and the Government, including the critical materials research and development needs of the private and public sectors;

(5) to advise the President of mineral and material trends, both domestic and foreign, the implications thereof for the United States and world economies and the national security, and the probable effects of such trends on domestic industries;

(6) to assess through consultation with the materials academic community the adequacy and quality of materials-related educational institutions and the supply of materials scientists and engineers;

(7) to make or furnish such studies, analyses, reports, and recommendations with respect to matters of materials-related policy and legislation as the President may request;

(8)(A) to prepare a report providing a domestic inventory of critical materials with projections on the prospective needs of Government and industry for these materials, including a long-range assessment, prepared in conjunction with the Office of Science and Technology Policy in accordance with the National Materials and Minerals Policy, Research and Development Act of 1980, and in conjunction with such other Government departments or agencies as may be considered necessary, of the prospective major critical materials problems which the United States is likely to confront in the immediate years ahead and providing advice as to how these problems may best be addressed, with the first such report being due on April 1, 1985, and (B) review and update such report thereon to Congress at least biennially; and

(9) to recommend to the Congress such changes in current policies, activities, and regulations of the Federal Government, and such legislation, as may be considered necessary to carry out the intent of this title and the National Materials and Minerals Policy, Research and Development Act of 1980.

(b) In carrying out its responsibilities under this section the Council shall have the authority—

(1) to establish such special advisory panels as it considers necessary, with each such panel consisting of representatives of industry, academia, and other members of the private sector, not to exceed ten members, and being limited in scope of subject and duration; and

(2) to establish and convene such Federal interagency committees as it considers necessary in carrying out the intent of this title.

(c) In seeking to achieve the goals of this title and related Acts, the Council and other Federal departments and agencies with responsibilities or jurisdiction related to materials or materials policy, including the National Security Council, the Council on Environmental Quality, the Office of Management and Budget, and the Office of Science and Technology Policy, shall work collaboratively and in close cooperation.

## PROGRAM AND POLICY FOR ADVANCED MATERIALS RESEARCH AND TECHNOLOGY

Sec. 205. (a) In addition to the responsibilities described in section 204, the Council shall be responsible for coordination with appropriate agencies and departments of the Federal Government relative to Federal materials research and development policies and programs. Such policies and programs shall be consistent with the policies and goals described in the National Materials and Minerals Policy, Research and Development Act of 1980. In carrying out this responsibility the Council shall—

(1) (A) establish a national Federal program plan for advanced materials research and development, recommend the designation of the key responsibilities for carrying out such research, and to provide for coordination of this plan with the Office of Science and Technology Policy, the Office of Management and Budget, and such other Federal offices and agencies as may be deemed appropriate, and (B) annually review such plan and report thereon to the Congress.

(2) review annually the materials research, development, and technology authorization requests and budgets of all Federal agencies and departments; and in this activity the Council shall make recommendations, in cooperation with the Office of Science and Technology Policy, the Office of Management and Budget, and all other Federal agencies deemed appropriate, to ensure close coordination of the goals and directions of such programs with the policies determined by the Council; and

(3) assist the Office of Science and Technology Policy in the preparation of such long-range materials assessments and reports as may be required by the National Materials and Minerals Policy, research and Development Act of 1980, and assist other Federal entities in the preparation of analyses and reporting relating to critical and advanced materials.

(b) The Office of Management and Budget, in reviewing the materials research, development, and technology authorization requests of the various federal departments and agencies for any fiscal year, and the recommendations of the Council, shall consider all of such requests and recommendations as an integrated, coherent, multiagency request which shall be reviewed by the Office of Management and Budget for its adherence to the national Federal materials program plan in effect for fiscal year under subsection (a).

## INNOVATION IN BASIC AND ADVANCED MATERIALS INDUSTRIES

Sec. 206. (a) (1) In order to promote the use of more cost-effective, advanced technology and other means of providing for innovation and increased productivity within the basic and advanced materials industries, the Council shall evaluate and make recommendations regarding the establishment of Centers for Industrial Technology as provided in Public Law 96-480 (15 U.S.C. 3705).

(2) The activities of such Centers shall focus on, but not be limited to, the following generic materials areas: corrosion; welding and joining of materials; advanced processing and fabrication technologies; micro-fabrication; and fracture and fatigue.

(b) In order to promote better use and innovation of materials in design for improved safety or efficiency, the Council shall establish in cooperation with the appropriate Federal agencies and private industry, an effective mechanism for disseminating materials property data in an efficient and timely manner. In carrying out this responsibility, the Council shall consider, where appropriate, the establishment of a computerized system taking into account, to the maximum extent practicable, existing available resources.

## RESPONSIBILITIES AND DUTIES OF THE DIRECTOR

Sec. 209. In carrying out his functions the Director shall assist and advise the Council on policies and programs of the Federal Government affecting critical and advanced materials by—

(1) providing the professional and administrative staff and support for the Council;

(2) assisting the Federal agencies and departments in appraising the effectiveness of existing and proposed facilities, programs, policies, and activities of the Federal Government, including research and development, which affect critical materials availability and needs;

(3) cataloging, as fully as possible, research and development activities of the Government, private industry, and public and private institutions; and

(4) initiating Government and private studies and analyses, including those to be conducted by or under the auspices of the Council, designed to advance knowledge of critical or advanced materials issues and develop alternative proposals, including research and development, to resolve national critical materials problems.

## POSITION AND AUTHORITIES OF EXECUTIVE DIRECTOR

Sec. 208. (a) There shall be an Executive Director (hereinafter referred to as the "Director"), who shall be chief administrator of the Council. The Director shall be appointed by the Council full time and shall be paid at the rate not to exceed the rate of basic pay provided for level III of the Executive Schedule.

(b) The Director is authorized—

(1) to employ such personnel as may be necessary for the Council to carry out its duties and functions under this title, but not to exceed twelve compensated employees;

(2) to obtain the services of experts and consultants in accordance with the provisions of section 3109 of title 5, United States Code; and

(3) to develop, subject to approval by the Council, rules and regulations necessary for the Council to carry out the purposes of this title.

(c) In exercising his responsibilities and duties under this title, the Director—

(1) may consult with representatives of academia, industry, labor, State and local governments, and other groups; and facilities, and information (including statistical information) of public and private agencies, organizations, and individuals.

(d) Notwithstanding section 367(b) of the Revised Statutes (31 U.S.C. 665(b)), the Council may utilize voluntary and uncompensated labor and services in carrying out its duties and functions.

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*See details on proceedings and extended abstract volumes on page 4 of this issue.*

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24-27 Ninth Symposium on Thermophysical Properties. Boulder, CO.  
H. J. M. Hanley, NBS, 773-2, Boulder, CO 80303; (303) 497-3320.

24-28 Seventh International Conference on Laser Spectroscopy. Maui, Hawaii.  
T. W. Hansch, Physics Dept., Stanford Univ., Stanford, CA 94305.

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JULY 1985

23-25 Physical Interactions and Energy Exchange at the Gas-Solid Interface. Hamilton, Ontario, Canada.  
Prof. J. A. Morrison, Institute for Materials Research, McMaster Univ., Hamilton, Ontario, Canada L8S 4M1.

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AUGUST 1985

12-14 **MRS** Second International Symposium on Hydrothermal Reactions. Pennsylvania State University, University Park, PA.  
Prof. H. L. Barnes, 235 Deike Bldg., The Pennsylvania State University, University Park, PA 16802.

18-24 Fifth International Conference on Solid State Ionics. Lake Tahoe, CA.  
Peggy Little, LBL Conference Coordinator, Lawrence Berkeley Lab, Berkeley, CA 94720.

19-23 Eighth International Conference on Thermal Analysis. Bratislava, Czechoslovakia.  
8th ICTA Organizing Committee, c/o Slovak Technical University, 812 43 Bratislava, Czechoslovakia.

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SEPTEMBER 1985

9-11 **MRS** 1985 MRS Symposium on the Scientific Basis for Nuclear Waste Management. Stockholm, Sweden.  
Lars O. Werme, Swedish Nuclear Fuel Supply Co., Div. KBS, P.O. Box 5864, Stockholm S-10248, Sweden.

15-19 14th North American Thermal Analysis Society Conference. San Francisco, CA.

30-4 11th Molecular Crystals Symposium. Lugano, Switzerland.  
XIth Molecular Crystals Symposium, Dept. of Physics, University of Basel, Basel, Switzerland.

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OCTOBER 1985

13-18 Electrochemical Society Fall Meeting. Las Vegas, NV.  
Electrochemical Society, 10 S. Main St., Pennington, NJ 08534-2896.

15-18 Optical Society of America Annual Meeting. Washington, DC.  
Optical Society of America, 1816 Jefferson Pl., N.W., Washington, DC 20036.

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NOVEMBER 1985

3-7 Meeting of the Division of Plasma Physics of the APS. San Diego, CA.  
W. W. Havens, 335 E. 45th St., New York, NY 10017.

18-22 32nd National Vacuum Symposium of the AVS. Houston, TX.  
N. Hammond, 335 E. 45th St., New York, NY 10017.

25-29 **MRS** MRS-Europe Fall Meeting. Strasbourg, France.  
P. Siffert, CRN, Laboratoire PHASE, 67037 Strasbourg, France.

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DECEMBER 1985

2-6 **MRS** Fall Meeting of the Materials Research Society. Boston, MA.  
J. B. Ballance, Materials Research Society, 9800 McKnight Rd., Suite 327, Pittsburgh, PA 15237; (412) 367-3003.

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MARCH 1986

17-21 General Meeting of the APS. Las Vegas, CA.  
W. W. Havens, 335 E. 45th St., New York, NY 10017.

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MAY 1986

4-9 Spring Meeting of the Electrochemical Society. Boston, MA.  
Electrochemical Society, 10 S. Main St., Pennington, NJ 08534-2896.

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JUNE 1986

10-13 OSA/IEEE Conference on Lasers & Electro-Optics (CLEO '86). San Francisco, CA.  
Optical Society of America, 1816 Jefferson Pl., N.W., Washington, DC 20036.

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SEPTEMBER 1986

8-11 16th European Solid State Device Research Conference. Cambridge, UK.  
Meetings Officer, IOP, 47 Belgrave Sq., London, UK SW1X 8QX.

28-1 13th International Symposium on GaAs and Related Compounds. Hilton Head, SC.  
C. M. Wolfe, Washington Univ., Box 1127, St. Louis, MO 63130.

