

programs must be firmly in the hands of full-time Government officials clearly responsible to the President and the Congress. With programs of the size and complexity now common, this requires that the Government have on its staff exceptionally strong and able executives, scientists, and engineers, fully qualified to weigh the views and advice of technical specialists, to make policy decisions concerning the types of work to be undertaken, when, by whom, and at what cost, to supervise the execution of work undertaken, and to evaluate the results.

At the present time we consider that one of the most serious obstacles to the recruitment and retention of first-class scientists, administrators, and engineers in the Government service is the serious disparity between governmental and private compensation for comparable work. We cannot stress too strongly the importance of rectifying this situation, through Congressional enactment of civilian pay reform legislation as you have recommended.

3. Given proper arrangements to maintain management control in the hands of Government officials, federally-financed research and development work can be accomplished through several different means: direct governmental operations of laboratories and other installations; operation of Government-owned facilities by contractors; grants and contracts with universities; contracts with not-for-profit corporations or with profit corporations. Choices among these means should be made on the basis of relative efficiency and effectiveness in accomplishing the desired work, with due regard to the need to maintain and enlarge the long-term strength of the Nation's scientific resources, both public and private.

In addition, the rapid expansion of the use of Government contracts, in a field where twenty-five years ago they were relatively rare, has brought to the fore a number of different types of possible conflicts of interests, and these should be avoided in assigning research and development work. Clear-cut standards exist with respect to some of these potential conflict-of-interest situations—as is the case with respect to persons in private life acting as advisers and consultants to Government, which was covered in your memorandum of February 9, 1962. Some other standards are now widely accepted—for example, the undesirability of permitting a firm which holds a contract for technical advisory services to seek a contract to develop or to supply any major item with respect to which the firm has advised the Government. Still other standards are needed, and we recommend that you request the head of each department and agency which does a significant amount of contracting for research and development to develop, in consultation with the Attorney General, clear-cut codes of conduct, to provide standards and criteria to guide the public officials and private persons and organizations engaged in research and development activities.

4. We have identified a number of ways in which the contracting system can and should be improved, including:

- providing more incentives for reducing costs and improving performance;
- Improving our ability to evaluate the quality of research and development work;
- giving more attention to feasibility studies and the development of specifications prior to inviting private proposals for