

6. Would you describe the principal operations that are involved in producing this output?

The outputs of the research, development, and engineering category are not readily quantifiable. The usual operations involved in research and development, however, are:

- (a) Analysis of the problem;
- (b) Evaluation of alternatives for solution;
- (c) Selection of alternatives for development;
- (d) Evaluation of advanced technology applications;
- (e) Feasibility model design and test;
- (f) Prototype design and test;
- (g) Field test and modifications; and,
- (h) Procurement for operational use.

In construction engineering the usual major operations involved are:

- (a) Development of design data;
- (b) Evaluation of alternative designs;
- (c) Preparation of preliminary drawings for buildings;
- (d) Preparation of systems layout and drawings and specifications for mechanization;
- (e) Review of architect drawings; and
- (f) Onsite supervision of construction or mechanization installations.

In industrial engineering the primary operations include analyses of operations as currently performed and the development of alternative methods for performance.

7. How many employees are involved in the program and in what general type of employment categories do they fall?

The Bureau of Research and Engineering which is responsible for the conduct and administration of this program has an authorized staff of 538 for fiscal year 1968 including temporary positions. Of the permanent positions 68 are allocated to Bureau headquarters and appear under category VII. The remainder are allocated as follows:

Research and development.....	160
Construction engineering	244
Industrial engineering	39
Temporary employees	27

The employees of the Bureau of Research and Engineering are primarily engineers, architects, and technicians. Other skills include contract specialists, operations research analysts, and clerical support types.

8. What is the grade structure and how many supergrades—quota and non-quota—are involved?

The grade structure of positions allocated to this category is as follows:

Level	Number of Positions
Executive level V.....	2
Scientific and technical positions (Public Law 313)	6
GS-17	1
GS-16	7
GS-15	44
GS-14	82
GS-13	108
GS-12 and below.....	186
Wage board	7
Temporary positions	27
Total positions	470

The number of supergrades authorized is eight.

9. What capital equipment, such as ADP, if any, do you rely upon to fulfill this program?

The Bureau of Research and Engineering operates a test center located in the Washington City Post Office and a small advanced technology laboratory in the International Safeway building. Both of these facilities are equipped with test equipment procured to support the Research, Development, and Engineering program. The investment to date in this type of equipment has been nominal as the result of the Department's having performed most of its prior research and development work under contract with industry, other Government agencies, and