RC's briefing notes for P 7eb6

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Semi-annual Status Report of AEC

I. Raw Materials

1. Prospects for uranium procurement continue to improve
2. Confident that US by 1960 can reach its goal of 12,500 of U308 annually.
3. Table, p. 5 U.S., Canada, Australia, Belgian Congo, So Africa.

II. Fissionable Materials

1. New requirements for weapons being developed — more big weapons, slow down on smaller weapons.
2. To meet interim thermonuclear requirements, new facilities started up in summer to produce LITHIUM 6 and DEUTERIUM GAS — requirements for OPERATION CASTLE met by November — now producing limited amounts for "emergency capability" of weapons.
3. Plutonium Production — exceeded in 1953 by 18% quantity specified by P in June/53. TABLE, p 8
4. Uranium 235 production — has continued to increase, exceeded by 27% quantity specified by P in June/53. Table, p 10

II Weapons Development and Production

1. Objective: to produce thermonuclear weapons as quickly as possible to permit emergency delivery capability; also to develop improved thermonuclear weapons which are lighter and more easily developed.

2. Operation CASTLE

[redacted]

Result of CASTLE

1. furnish guidance in selecting most efficient emergency capability weapons for stockpiling
2. prove value of Lithium 6 as a thermonuclear fuel
3. evaluate other data to improve thermonuclear designs.

3. Fission Weapons - developing 2 additional types to 5 improved types already existing (a 16-inch weapon for Navy; an 8-inch weapon for Army).

Table, p 12 - great growth of atomic cores (because making smaller "nuclear assemblies")

IV. Reactor Development

1. Industrial participation
   a. Study agreements with 5 new industrial participation groups.
   b. 8 groups of industrial & utility concerns now engaged in surveys of reactor technology.
2. Reports by AEC
   a. estimate of social, political, economic, & international effects of using nuclear energy for industrial purposes.
   b. technological accomplishments in reactor development, with recommended future development program.
3. Government reactor program
   a. Westinghouse to research and develop the first model reactor of the pressurized-water type (takes place of cancelled large-ship reactor). Industry asked to submit proposals to participate financially.
   b. 4 other experiments in different types of possible reactors at Argonne & Oak Ridge.
   c. Submarine reactors
      Nautilus
      Sea Wolf (improved Nautilus)
      At General Electric - a study of Advanced Reactor

d. Aircraft Reactors - two types being experimented with - General Electric and Oak Ridge. No flights will be made until tests prove reactor is capable of specific mission, etc.

V Unit Costs

down in 1953 over 1951

42% for plutonium

45% for uranium

{despite 119% increase in cost of uranium concentrates

Table, p. 18

VI. AEC Expenditures Table p 19

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