

Princeton-Pennsylvania Accelerator Laboratory
INSTALLATION

Atomic Energy Commission
AGENCY OR DEPT.

121

1. TYPE OF FEDERAL GOVERNMENT-OWNED INSTALLATION:

A. R&D LABORATORY

- (1) GOVERNMENT-OPERATED
(2) FFRODC
(3) CONTRACTOR-OPERATED

B. SUBSIDIARY R&D ORGANIZATION

- (1) GOVERNMENT-OPERATED
(2) CONTRACTOR-OPERATED

C. CONTRACTOR: Princeton University

2. DIRECTOR: Dr. Milton White A. TECHNICAL DIRECTOR: Dr. Milton White

3. LOCATION: A. Princeton B. Middlesex C. New Jersey
(Nearest City) (County) (State)

4. P. O. ADDRESS: P. O. Box 682

A. Princeton B. New Jersey C. 08540 D. 609-452-5330
(City) (State) (Zip Code) (Telephone (Area Code & No.))

5. PERSONNEL: (As of June 1969):
A. R&D PROFESSIONALS (Total): 56 B. FUNDING (Approximate FY 1969 Dollar Costs):
A. INTRAMURAL (Total): \$ (See Item 9)

B. ALL OTHER PERSONNEL (Total): 212 B. EXTRAMURAL (Total): \$ 0

7. MAJOR FUNCTIONS AND ACTIVITIES (Include COSATI Codes):

The Princeton-Pennsylvania Accelerator Laboratory is engaged in the study of elementary particles and nuclear structure. A 3-billion electron volt proton synchrotron, is being used by scientists from Princeton, the University of Pennsylvania, and other institutions to study the properties of π , K and other elementary particles. The collective behavior of nucleons in nuclei is being examined through the interaction of high energy protons and mesons with complex nuclei.

(20-08 Physics - Particle Physics)

Design and operation of betatrons, cyclotrons, and synchrotrons,
(20-07 Physics - Particle Accelerators)

A. ADDITIONAL COSATI CODES:

SURVEY OF FEDERAL GOVERNMENT RESEARCH AND DEVELOPMENT LABORATORIES

Conducted By THE NATIONAL SCIENCE FOUNDATION For The
FEDERAL COUNCIL FOR SCIENCE AND TECHNOLOGY

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8. MAJOR EQUIPMENT:

The Laboratory consists of 3-BeV accelerator, large crane covered target areas, setup laboratories, shops, offices, library, seminar rooms, and computing facilities.

Also available are high kilowatt power supplies, numerous quadrupole and dipole magnets, and portable shielding.

9. COMMENT AND PUBLICATION REFERENCES:

Publications resulting from Princeton-Pennsylvania Accelerator experimentation appear in scientific periodicals. Typical examples follow:

Measurement of the Relative Rate K_{e2}^+ / K_{u2}^+ (R. Macek, A. K. Mann, W. K. McFarlane, J. B. Roberts, K. W. Rothe, C. H. West, L. B. Auerbach) Phys. Rev. Lett, 22, 32 (1969)

Associated Production by 1.7 BeV/c π^+ on Proton (Y. L. Pan, F. Forman, W. Ko, V. Hagopian) APS Bull. 14, 39 (1969)

Differential Cross Section for $n+p \rightarrow d+\pi^0$ - A Test of Charge Independence (I. S. Hammerman, D. F. Bartlett, C. E. Friedberg, K. Goulianos, D. P. Hutchison) APS Bull. 14, 76 (1969)

Differential Cross Section of $n+p \rightarrow d+y$ (C. E. Friedberg, D. F. Bartlett, K. Goulianos, I. S. Hammerman, D. P. Hutchison) APS Bull. 14, 76 (1969)

Measurement of K_1^0 Lifetime (D. I. Lowenstein, C. D. Buchanan, I. D. Goldblatt, K. Lande, J. Niederer) APS Bull. 14, 92 (1969)
(Million)

Item 6.A. Operating Costs.....	\$5.0
Equipment Costs.....	0.4
Construction Costs.....	<u>1.1</u>
Total AEC Costs.....	<u>\$6.5</u>

* University of Pennsylvania participates with Princeton University in the operation of the accelerator.

10. DATE OF REPORT:
October, 1969