

PHYSICS

Atomic Power Plant

Private industry is making a start on production of electric power from fissioning atoms. Prices will not be competitive with power from other means.

► ATOMIC ENGINEERS are cautiously taking a bold step forward. They are working out an untried design for the world's first commercial, nuclear-fueled electric power house to be built near Pittsburgh.

Nothing like it has ever been built before. However, the pioneering engineers comfort themselves with visions of the future when radioactive uranium will turn mammoth turbines to make cheap electricity for your home.

They feel they now can domesticate the fearful atom and they want to give their ideas a whirl.

Although the actual design has not been proved, it was worked up from experience gained from the atomic engine for the nation's first nuclear-powered submarine. More experience spilled into this commercial design from a Navy project aimed at producing a suitable reactor to drive large ships.

Engineers feel confident that no nuclear explosion will shatter the tranquility of the wooded south bank of the Ohio River.

If something does go wrong, despite the safety devices that will be watching over the nuclear furnace, the explosion would not be like an A-bomb's, the Atomic Energy Commission reports.

It would be more like a large industrial

explosion. Or it could be that the furnace would get too hot, melting some of the equipment and maybe spilling some of its materials.

The core of this furnace, which is to be built by Westinghouse Electric Corporation for the Duquesne Light Company about 25 miles northwest of Pittsburgh, will weigh more than 10 tons. It will be made up of natural uranium and the U-235 isotope.

It will be capsuled in a cylinder six feet in diameter and seven and a half feet in height. The reactor is designed to accommodate even larger cores in the future, if they seem desirable. It can accept cylinders up to nine feet in diameter and 25 feet high.

The 20,000 pounds of uranium, which contains slightly more of the U-235 isotope than of the natural element, will generate surface temperatures up to 636 degrees Fahrenheit. This is the boiling point of water under a pressure of 2,000 pounds per square inch.

Water at this pressure will circulate through three loops from reactor to a heat exchanger, carrying off enough heat to develop 60,000,000 watts of electricity. A fourth loop is held in reserve for emergencies. About 16,000 gallons of water a minute can be pumped through each loop.

No one expects this first atomic power plant to produce electricity at prices competitive with current rates. AEC officials say, however, they "hope" the cost will not be much higher.

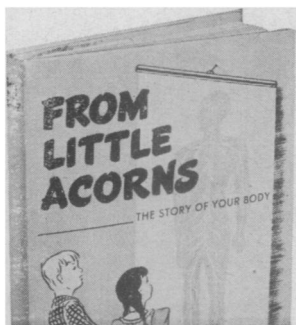
So that various ideas can be tried out, a great deal of flexibility is being designed into the plant. With experimentation, engineers should learn how to improve future atom power plants and cut power generation costs.

The actual design is nearing completion, and ground-breaking should come sometime this fall, the AEC says. The whole project should be finished in about four years.

It is an \$85,000,000 project, including the generating and substation equipment for which the Duquesne Light Company will pay. The company also is contributing \$5,000,000 toward the development of the nuclear reactor. It will purchase steam generated by the nuclear reactor at eight mills for each kilowatt-hour of electricity it generates from it.

The latter arrangement will, it is claimed, "save" the government about \$30,000,000, bringing the government's interest in the project to \$50,000,000. The Duquesne Light Company also will man and operate the entire plant.

Science News Letter, July 10, 1954



FROM LITTLE ACORNS:
The Story of Your Body
by Frances W. Butterfield
Pictures by Dorothy M. Weiss

In **STORY FORM**, tells your child—from "toy age" to teen age—**ALL** about the human body—the eyes, ears, teeth, muscles, blood, digestive system, reproductive system. A **CHARMING** words-and-pictures story as well. It tells about these things in terms of ordinary, everyday events and objects your youngster already knows about.

"Accurate . . . factual . . . skillful . . . Intelligent. . . Should be a great help to parents as well as young people. Recommended highly for home libraries."—**LIBRARY JOURNAL**.

"Readers . . . will love the charming story, interwoven with accurate, factual stories of the body."—**TODAY'S HEALTH**.

"Clever new sort of physiology for boys and girls . . . with excellent, simple diagrams of our insides. . . Most parents will welcome heartily the final chapter, 'Male and Female.'"—**NEW YORK HERALD TRIBUNE**.

\$2.50 Postfree • 5-Day Money-Back Guarantee
EMERSON BOOKS, Inc., Dept. 75-K
251 West 19th St., New York 11



Sells 15 Stories After Enrolling in N.I.A.

"Since enrolling in the N.I.A. eight months ago, I have sold 15 feature stories to the Lewiston Evening Journal. N.I.A. Training is to a writer what a road map is to a motorist." — Mildred B. Fossett, 12 Spruce St., Gardiner, Maine.

WHY CAN'T YOU WRITE?

It's much simpler than you think!

SO many people with the "germ" of writing in them simply can't get started. They suffer from inertia. Or they set up imaginary barriers to taking the first step. Many are convinced the field is confined to persons gifted with a genius for writing.

Few realize that the great bulk of commercial writing is done by so-called "unknowns." Not only do these thousands of men and women produce most of the fiction published, but countless scientific papers, articles on science, books, business, sports, hobbies, travel, local club and church activities, etc., as well.

Such material is in constant demand. Every week thousands of checks for \$25, \$50 and \$100 go out to writers whose latent ability was perhaps no greater than yours.

The Practical Method

Newspaper work demonstrates that the way to learn to write is by writing! Newspaper copy desk editors waste no time on theories or ancient classics. The story is the thing. Every copy "cub" goes through the course of practical criticism—a training that turns out more successful authors than any other experience.

That is why Newspaper Institute of America bases its writing instruction on the Copy Desk Method. It starts and keeps you writing in your own home, on your own time. And upon the very same kind of actual assignments given daily to metropolitan reporters. Thus you learn by doing, not by studying the individual styles of model authors.

Each week your work is analyzed constructively by practical writers. Gradually they help to clarify your own distinctive style. Writing soon becomes easy, absorbing. Profitable, too, as you gain the "professional" touch that gets your material accepted by editors. Above all, you can see constant progress week by week, as your faults are corrected and your writing ability grows.

Have You Natural Ability?

Our **FREE** Writing Aptitude Test will reveal whether or not you have natural talent for writing. It will analyze your powers of observation, your imagination and dramatic instinct. You'll enjoy taking this test. There is no cost or obligation. Simply mail the coupon below, today. Newspaper Institute of America, One Park Avenue, New York 16, N. Y. (Founded 1925.) (Licensed by State of New York.)

Free Newspaper Institute of America
One Park Ave., New York 16, N. Y.

Send me, without cost or obligation, your **Writing Aptitude Test** and further information about writing for profit as promised in Science News Letter, July 10.

Mr. }
Mrs. }
Miss }
Address

City..... Zone.... State.....
(All correspondence confidential. No salesman will call on you.) 117-L-594

Check here if Veteran

Copyright 1953, Newspaper Institute of America

