



POWER FROM ATOM—With this tiny atomic heat battery developed at Mound Laboratory, power is obtained which gives better than one-half volt reading on a standard voltmeter.

PHYSICS

Atomic "Heat Battery" Born at AEC Laboratory

► AN ATOMIC battery with a blistering hot core of radioactive polonium has been developed in the Atomic Energy Commission's Mound Laboratory, Miamisburg, Ohio.

Developed by John H. Birden and Kenneth C. Jordan, laboratory scientists, the battery applies the heat of its capsuled core to 40 thermocouples. The thermocouples, each of which is a pair of two dissimilar metals joined at one end, convert the heat into tiny amounts of electric energy.

The battery is small and light and its voltage-current rating can be varied by proper choice of wire size and the number of thermocouples used. The Mound battery uses a polonium heater of 4.65 watts and delivers a maximum electrical power of .0094 watts. When not loaded, the battery's voltage measures .75 volts and its maximum current can reach .025 amperes.

Believed to be useful in instruments where long-life dependability is required, the battery's polonium heart emits alpha particles and reaches temperatures of 450 degrees Fahrenheit. The outside of the battery is shielded from this heat so that no fingers are burned when the battery is handled. Polonium's radioactive half-life is 138 days.

The Mound Laboratory is operated for the Atomic Energy Commission by the Monsanto Chemical Company.

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An estimated 1,300 gallons of water are used each day to supply the direct and indirect needs of each U. S. citizen.

PSYCHOLOGY

"Church in the Round"

► HOW ONE congregation applied modern group psychology techniques to create a new and more personally meaningful service of worship, is described by the minister of the First Unitarian Church in St. Louis, Mo., Rev. Thaddeus B. Clark.

A committee planned the meeting to take place in the hour which the usual service required. All who did not think they would like to take part in an experiment in worship were warned to stay away from the meeting.

The "Church in the Round," as the meeting came to be called, gathered in a room where all the people could sit in a big circle. Later the people regrouped in 13 small circles.

Each small circle was asked to discuss and decide why they come to church, what they expect to get from church.

Before the group discussions, one man from each group was picked as reporter. The 13 reporters met with the minister in the pantry. They were instructed to find out what the group decision was and be ready to report the gist of it when called upon. The reporters then returned to their respective groups.

After a few minutes for summarizing the decisions, the reporters were called upon one by one. Then they were asked to boil down their statements to a single sentence each.

The minister undertook to bring the 13 statements together into a coherent statement of common aspiration, or prayer.

The associate minister who was a musician provided a bit of traditional music and a poet in the congregation who had listened to the statements from the reporters composed words to fit the music.

All these parts were fitted together and an invocation and benediction added to

CHEMISTRY

Uranium Separation Cell Is Warm, Not Hot

► FLUORINE, THE furious chemical element essential for the separation of atomically explosive uranium for A-bombs and power, is being produced in large quantities for use of a new electrolytic cell that operates warm instead of hot.

G. H. Montillon, engineer of the Union Carbide and Carbon Corporation, described the new fluorine producer at the American Chemical Society meeting in New York. The new cell, in units that produce two tons daily, will be used at uranium separation plants at Oak Ridge, Tenn., and Paducah, Ky.

Fluorine is one of the most active gaseous chemical elements and in hydrofluoric acid it eats away even glass.

It is used in many chemical processes besides atomic manufacture.

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form a complete congregation-made service.

"We did not presume that we had in this service created great church liturgy," explained Dr. Clark in reporting the "Church in the Round" to the current issue of "Adult Leadership." "Yet for some people, we created an understanding of liturgy that was of new depth." The experiment suggests that the traditional worship service is the result of a people's common experience collected and amended through the years.

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