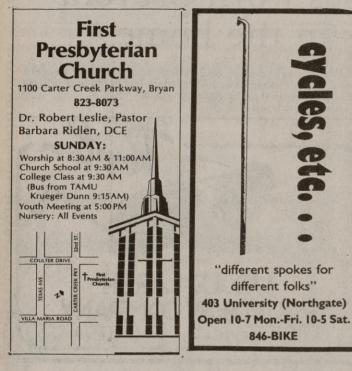
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Compressed air project saves oil

Technology conserves energy Ic

United Press International NEW YORK — By storing compressed air underground and using it to turn generators, the electric utility industry could save 100 million barrels of oil a year, says a spokesman for Bat-telle Pacific Northwest Laboratories.

It's already being done in Germany and at least a dozen American electric utilities have compressed air power projects on the drawing boards, said Bat-telle's project manager T.J. Daugherty.

Daugherty said the largest proposed compressed-air pro-ject he knows about in the United States is being planned by Maryland's Potomac Power Co., which wants to store enough compressed air in hard rock caverns to produce 1,000 megaconsumption hours. The German plant at Hun-

torff has been operating since 1977. The compressed air is stored underground in old salt mine caverns

Battelle is managing a study at Pittsfield, Ill., under a \$2.2 million federal grant, to determine the feasibility of storing compressed air for power generation in porous rock the way na-ture stores oil and gas. The actual work is being done by the Houston office of Parsons Brinckerhoff, the widely known engineering firm, and Kaver-nen Bau-und-Betriebs Co. of Germany.

Using compressed air to turn power-generating turbines, of ity industry is that the genercourse, potentially great improvement

power generating cycle. The curse of the electric util-

The plant being operated in Germany has demonstrated such a high efficiency for the compressed-air storage cycle that utilities have become interested in the system — T.J. Daugherty, Battelle project manager.

is a variant of, and a ators have to produce vastly more power than is needed dur-

watts of electricity during peak over, the pumped storage water consumption hours. over, the pumped storage water power generating cycle. ing the off-peak consumption hour storage, Date the fuel savings might be fuel sav transported considerable distances, this power just goes to waste.

In the pumped storage cycle the excess power is stored by us-ing it to pump water into a reservoir. During the peak consump-tion hours, this water flows back to the power plant by gravity and helps turn the turbines, saving vast amounts of fuel.

If air is substituted for water in a pumped storage cycle, it has many advantages. Water in the quantities needed to generate power is available at limited locations. Air is everywhere and unlimited in supply and it doesn't need gravity to exert its force.

The capital requirements of compressing and storing air underground appear to be sub-stantially less than those of oumping and storing water. But Daugherty said no general figures on these comparative costs can be given because the costs vary so much from site to site. Nevertheless, he said, it can be calculated pretty accurately that widespread use of a compressed air storage cycle could save the electric utility industry at least 100 million barrels of petroleum or coal equivalent yearly.

In comparison with the cost of running a power plant on gas turbines without any off-peak

Two to spacewal Because during fifth flighter, the fli of space shuttle Trink as That's of

United Press International HOUSTON — Two men will walk in space for the first time in more than eight years in November under current plans for the fifth space shuttle mis-sion, Johnson Space Center offi-

cials report. But JSC officials noted the extravehicular activity could be scrubbed when the final plan is done.

"We've been told to plan everything for it," said Jim Bates, flight requirements manager for the fifth shuttle flight.

"Get the equipment ready. Get the crew ready. But don't put it in a contract. JSC officials said Tuesday the

current plan calls for mission specialist astronauts William Lenoir and Joseph Allen to put on space suits on the third day of

order of one third. Daugherty said to being operated in Gen demonstrated such a ciency for the con storage cycle that u ecome interested in

Battalion/Pa May 6,

Most of the com plans on the utility boards are "hard no projects" like that d ower and one bein Soyland Power Cor catur, Ill. Daught ugh a however, what is need that the air can be st mically and safely in king for McDona

and other porous no tions called aquifer tions called aquifer ckey whe found almost every a, answere John Istvan of Kavents who w und-Betriebs explainge ice h will inject the compason start

will inject the compa into shallow, con The 20stone aquifer. The com Hous will demonstrate that r on the f nology can be used in g, and was formations as well ay. He and e team domes.

Istvan said that, inz tie up the use of compressed re such a underground for g "We're r electricity, some larger firms could use the pr expe get a steady supply o ds from will be ed air for pneumatic at favorable costs. In the e to rec

have p

Allen will be tethere he cost of ship. ze time at If actually carried^{ou}nly an ho ned on space shuttle^C McDona it will be the first spould like since Skylab 4 in Februa nee a wee

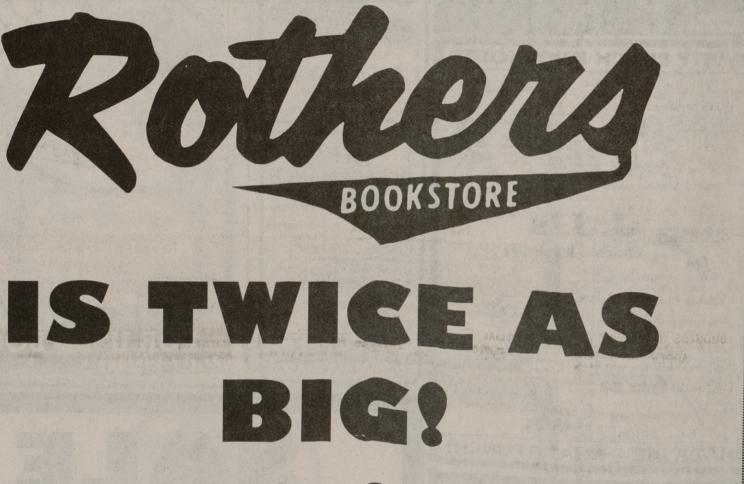
All three Skylab morracticing two-man space walks ably be un men walked on the morrost.

each Apollo landing. T As of n sians have never don he team's man space walk. If \$2,000 Dell'Osso said the aton, which will try to demonstrate Detober th of the entire extrate The Ag activity system, putting of the S activity system, putting

suits, leaving through lock into the payload working in the bay. Bates said the astrona

check the flexibility of ger, elbow, hip and kne check their reach in th

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the five-day mission and spend check how much they up to six hours in the shuttle payload bay testing the utility of the suits.

The astronauts will have television cameras on their helmets so viewers on the ground will be able to see what they are seeing as they go through mission practice tasks, training manager Ray Dell'Osso said.

Mission commander Vance Brand and pilot Robert Over-meyer will stay inside and monitor the activity, taking television and movie pictures for postflight evaluation. Lenoir and emergency.

through their visors and well the suits keep the They also will use

simulation board to test they can work in the su Colleg have foot grips for them on as they simulate w wrenches.

Lenoir and Allen also Bel the slide wires running length of the ship on en of the payload bay to m and forth. Once back they will recharge the

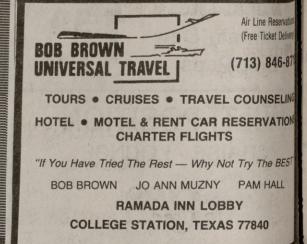
Four Americans help Chinese establish 4-H

United Press International The U.S. team is he WASHINGTON — Four 4-H program leader Americans have been sent to the Soobitsky. Other mem People's Republic of China to Ray Crabbs, a vice pro help the Chinese set up a 4-H youth program similar to that of the United States. The team will the University of Markowski and the University of Markowski an work with the Chinese govern-ment and university officials, cialist in Chinese inte community leaders and coordinators of Chinese youth programs.

The U.S. team is he affairs in the USDA (International Coopera Development.

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