

Solving the nuclear waste problem

by DAVID FOSTER
Like most environmental questions, nuclear waste disposal is a complex and sometimes confusing issue. The need for safe, permanent nuclear waste disposal is something we all

recognize regardless of our opinions on nuclear energy. Nuclear wastes like many industrial and chemical wastes, are extremely toxic. If we cannot find a safe way of getting rid of these wastes, we've got a

very big problem on our hands. Unlike most chemical wastes the toxicity of nuclear wastes decreases with time.

In future columns we will take a close look at many of the factors involved, but today, let's look at where these wastes come from and what's being done to look after them.

While there are different types of radioactive waste produced by the nuclear industry, most people are concerned about the fuel wastes from nuclear reactors.

The Pickering Nuclear Generating Station near Toronto was the first large Canadian nuclear plant. Pickering has

four operating reactors and four more under construction. Every day, each of these reactors produces about 12 bundles of spent fuel. A fuel bundle is 19½ inches long, 4 inches in diameter, and weighs 55 pounds.

To date about 5,000 tonnes of fuel waste have been produced by all of Canada's nuclear plants together, and this total will increase year by year as the reactors continue to operate.

A used fuel bundle contains a variety of different radioactive materials. Some of these materials remain radioactive for only a few days or weeks, others for tens of thousands of years.

The bundles give off large amounts of radiation and must be carefully handled and stored at the power plant site.

After being removed from the reactor, used fuel bundles are placed in large water-filled basins resembling swimming pools. The water stops the radiation given off by the bundles and absorbs the heat which they continue to produce for some time.

These "swimming pools" can provide temporary or interim storage for nuclear fuel wastes for more than 50 years. Unlike many aspects of nuclear power, experts agree that this type of interim storage is safe. But it does not provide a permanent disposal solution.

Some people feel that the nuclear industry has ignored the problem of permanent nuclear waste disposal until very recently. To be fair, scientists began working on this disposal question more than 25 years ago. However it wasn't until 1978 that a large disposal research program was started by the On-

tario and Federal governments.

This program appointed Atomic Energy of Canada Ltd. (AECL), a federal research company, to run the research program aimed at finding a permanent safe disposal process.

Scientists involved in this work believe the best method is to bury nuclear waste deep within the rock of the Canadian Shield. This area has existed for literally billions of years. The Shield contains large masses of solid granite rock called "plutons" which could prove to be the best areas for deep waste burial.

In order to find out whether this method of disposal will work, a great deal of research is necessary. Because the granite

rocks being studied have no commercial value, little scientific study has been carried out on them in the past. Scientists must know if nuclear wastes could escape from deep within this rock, and if so, how this could occur.

This research work has had to start from scratch. Scientists are adapting tools for the task of studying this kind of rock and new ways of analyzing how well nuclear wastes might be contained within them.

The job that these scientists face is large, and will require careful step-by-step investigation over a period of many years. It is not expected that a nuclear disposal site could be fully operational before the turn of the century.

WEDDING ANNOUNCEMENT

Mr. & Mrs. Wm. Norrie of Parry Sound and Mr. & Mrs. Roy Mills of Schreiber wish to announce the marriage of their children

Cindy
to
Donald

The wedding will take place on June 25, 1983 in Parry Sound, Ontario.

BIRTH ANNOUNCEMENT

Perry and Terri are pleased to announce the safe arrival of their son

James Alexander

born on May 31, 1983, weighing in at a healthy 8 lbs. 3 oz. Proud grandparents are Mr. & Mrs. Merton Burrows of Terrace Bay and Mr. & Mrs. Gerald Bond of Little Current, Ontario.

WEDDING ANNOUNCEMENT

Mr. Edward St. Denis is pleased to announce the forth coming marriage of his daughter

LUCILLE MARY-ALICE
TO
GERALD AUSTIN

son of Mr. & Mrs. Aubrey Boutilier of Terrace Bay. The marriage will take place on June 25, 1983 at St. Martins of Tours, Terrace Bay, Ontario.

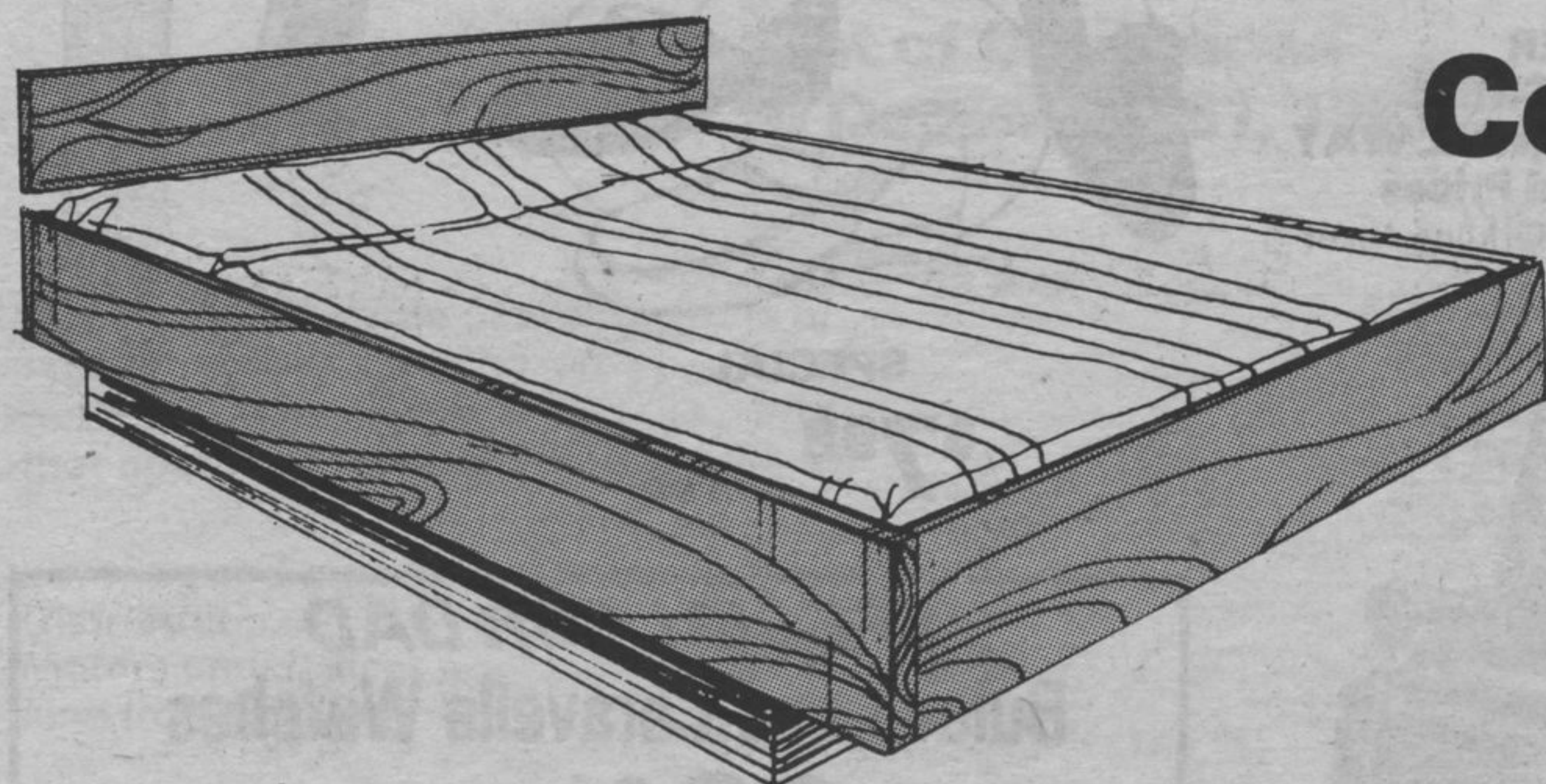
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