Vepco Executive Deplores Lack Of Planning For Storage Facilities

(Editor's Note: Mr. Ferguson, Virginia Electric & Power Company's executive vice president for power, recently wrote an article explaining the background of a problem and the options Vepco is considering to solve it. The article which follows was published August 4 in The Washington Post.)

By Jack H. Ferguson

After repeated changes of Federal policy that have gotten us nowhere, little time remains to solve the problem of what to do with used nuclear fuel when existing storage capacity begins running out.

This may sound esoteric and technical, but it is a matter in which every household, business and industry using Vepco's electric power has a big stake.

Because if Vepco -- and 16 other utilities in a similar situation -- are unable to obtain or provide suitable storage for used nuclear fuel, their reactors will have to shut down and electric rates will rise dramatically.

When the nation embarked on commercial nuclear power, everyone expected that used nuclear fuel would be chemically processed to separate and recover the reuseable uranium and plutonium. Responsibility for permanent disposal of the remaining waste was fixed by statute on the Federal government.

As a result, utilities built storage facilities at their reactors that were designed to hold fuel only until it was sent away for reprocessing.

In 1977, however, President Carter, prompted by concern over the spread of nuclear weapons, "indefinitely deferred" commercial reprocessing of nuclear fuel in the United States. The Carter Administration proposed instead to provide Federal storage capacity for used nuclear fuel. But Congress did not approve the necessary authorization and funding.

This spring the government changed direction again when the Reagan Administration told utilities to handle their own fuel storage problems and eliminated funding for Federal storage from the budget. While this policy, by itself, is reasonable, it represents yet another of the repeated changes in direction that have left the utilities caught in the middle -- with no supplemental storage facilities in sight and time rapidly running out. The ban on reprocessing remains in effect and even if it were lifted immediately reprocessing plants could not be in operation in time to avert the problem facing Vepco and many others.

Problems could arise as early as 1985, when Vepco will lose the ability to remove all fuel from one of its reactors at Surry -- a step that might be needed for repairs or inspection. A shutdown of the first unit at Surry, because the lack of storage space for used fuel would prevent refueling, would come in 1987. This shutdown would be followed by shutdowns of the second Surry unit in 1988 and the two North Anna units in 1990 and 1991.

Besides Vepco's four units, 25 other reactors from Maine to California will run out of storage space between 1985 and the early 1990s if the new capacity is not added.

These shutdowns would require a teeth-rattling increase in electric rates. Existing nuclear units are by far the lowest cost source of electricity. A kilowatt hour of electricity generated from uranium now costs about half a cent for fuel, compared to more than 2 cents per kilowatt-hour for energy from coal and well over five cents for oil.

Next year and for the rest of this decade, nuclear generators will provide 45 per cent or more of Vepco's total annual energy output. If these units were lost, the replacement power would have to come from more expensive coal and oil units. The loss of the two Surry units alone would increase customer costs by $300-million a year in terms of today's dollars.

None of this needs to happen. There are no technical reasons why the utilities, acting in accord with current government policy, cannot build suitable storage facilities in time to avert the risk of shutdowns, if the required government approvals are not delayed unduly. But there are real grounds for concern because every possible storage program faces numerous legal and regulatory hurdles.

After the 1977 deferral of reprocessing, Vepco began planning for the possibility that it might have to store its used fuel far longer than originally contemplated. It changed the method of storing fuel at Surry and North Anna to double the capacity of the existing facilities. And it undertook a detailed study of the options available for longer-term storage.

Findings of that study and subsequent analysis provide a running start toward dealing with the problem posed by the latest change of Federal policy.

Vepco is now considering the following major options:

-Increasing the capacity of the storage facility at North Anna a second time by using special neutron-absorbing materials to allow fuel to be packed more densely. A similar increase at Surry is ruled out because the structure there cannot bear the weight of the additional fuel.

-Shipping used fuel from Surry to North Anna for storage. Since Surry will run out of storage capacity first, the problem there can be postponed for about 18 months by shipping fuel to North Anna. Those shipments could be made safely with ample protection against accident or sabotage.

-Building a separate storage facility at Surry, North Anna or elsewhere. Like the existing facilities, this structure would be a pool with thick concrete walls and a stainless steel lining in which the fuel would be constantly covered by several feet of water.

-Using new techniques of dry storage in various type of containers.

-Redesigning and expanding the storage facility at the third nuclear unit being built at North Anna to accommodate used fuel from all five Vepco reactors for their entire operating lives.

All of these options involve substantial costs. But expenses for providing storage will be small compared to the costs of losing the power from the four nuclear units and will not change the status of the Vepco nuclear units as the least costly major source of electricity.

Within the next few months we must identify the option, or more probably the combination of options, that will provide safe storage of used fuel for an extended period, be as economical as possible, and be likely to win the various government approvals that are required.

This can be done and it must be done if Vepco customers are to continue benefitting from the company's large and hard-won nuclear capacity.