STATEMENT OF WORTH BATEMAN
ACTING DEPUTY ASSISTANT SECRETARY FOR ENERGY TECHNOLOGY
DEPARTMENT OF ENERGY
before the
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS
HOUSE OF REPRESENTATIVES

SPENT FUEL STORAGE

Mr. Chairman and Members of the Committee.

I am pleased to appear before you to discuss the need for away-from-reactor (AFR) storage of commercial spent fuel.

The Administration considers a solution to the problem of interim spent fuel storage a matter of the highest priority. We will shortly be transmitting legislation to the Congress that deals comprehensively with this entire area of concern.

Today, I would like to discuss our storage needs and possible options for meeting these needs.

Approximately 4000 metric tons of commercial spent fuel is in storage in the U.S. today. Estimates of the cumulative quantities of spent fuel produced in the U.S. between now and the year 2000 are presented in Table 1 under two different assumptions about the long-run growth of nuclear generating

capacity. The 148 Gwe case represents the total capacity of reactors currently on line, under construction or ordered. The 380 Gwe case represents a high estimate of nuclear power growth. As can be seen, about 12,000 metric tons of commercial spent fuel will be generated by 1983 and that number will grow to 27,000 metric tons by 1988. This will occur regardless of the long run growth of nuclear power generating capacity. Beyond 1988, the estimates diverge reflecting differences in the assumed growth rates. For planning purposes, it is important to focus on the period up to 1988 because 1988 represents the earliest possible time that a permanent repository will be available for disposing of high level radioactive waste or discarded commercial spent fuel. Prior to that date, and perhaps for some period after, spent fuel must be stored temporarily in interim storage facilities.

Table 1

SPENT FUEL (CUMULATIVE)
(Metric Tons)

Year	148 Gwe in 2000	380 Gwe in 2000
1980	7,000	7,000
1983	12,000	12,000
1988	27,000	27,000
1993	46,000	50,000
2000	71,000	98,000

The Administration favors two approaches to provide interim spent fuel storage. First, substantial spent fuel storage capacity can be provided in existing reactor storage basins. Indeed, the spent fuel which exists today is stored almost exclusively in these basins. Moreover, their effective capacity can, and in many cases has been, safely and economically increased up to four times present levels by reracking to provide higher density storage.

The Administration strongly favors the maximum practical use of reactor site storage. However, storage at reactors will not be sufficient to meet all storage needs.

For fuel that cannot be stored at reactor sites in a safe, efficient, and environmentally acceptable manner, we propose the establishment, by DOE, of away-from-reactor storage facilities. Government involvement is necessary because the economic risks of providing AFR services and facilities are considered by the private sector to be too high compared to alternate investments. Further, while utilities can and should be expected to meet a large fraction of interim storage needs in their own storage pools, relying entirely on individual utilities runs a serious risk that adequate capacity to handle all spent fuel will not be available.

Our analysis indicates that after substantial utility reracking, and some intrautility transshipments of spent fuel to other reactor basins, AFR storage requirements of one to three thousand metric tons would still result by 1983 and could exceed five thousand metric tons by 1988. This would mean that about ten percent of total spent fuel generated would be stored at AFRs. The remaining ninety percent would be stored at reactor sites. Acceptance of foreign spent fuel for storage in the U.S. where that served nonproliferation objectives could add modestly to these requirements.

A number of options are available for providing necessary AFR storage capacity. For early requirements, existing commercial facilities at Barnwell, South Carolina; Morris, Illinois; and West Valley, New York are possible options. For long term needs, new facilities or expansions to the existing facilities are possible. Table 2 presents data on the existing and potential storage capacities of these facilities.

Storage capacity at one or more of the existing facilities could be available in 1980 and reracking or expansion of these facilities would be completed by 1983 or 1984. The

Table 2

SUMMARY OF AFR OPTIONS

Facility	Existing Capacity MTHM	First Increment Capacity MTHM	First Increment Schedule Months	First Increment Cost $M[a/]	Final Expansion Capacity MTHM	Final Expansion Schedule Months	Final Expansion Cost $M
Barnwell	400	1100[b/]	30	$16M	5000	51	$110M
GE/Morris	450[c/]	1800	36	$24M	4800	60	$125M
NFS/West Valley	40[d/]	900	18	$21M	(No estimates available.)		
Greenfield	--	(Some capacity may be available prior to completion.)			5000	55	$290M
TVA	N/A	1500	48[e/]	$150M	4500	108	$300M

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a/ Does not include acquisition costs and possible tax expenditures in case of Barnwell, Morris and West Valley facilities.

b/ If no further expansion is planned, a capacity of 2250 MT can be obtained in 30 months at a cost of $25 million.

c/ Capacity is 750 MT of which 300 MT is presently occupied.

d/ Capacity is 260 MT of which 220 MT is occupied.

e/ Earlier capacity possible at existing TVA reactor sites.

Department is also considering a proposal by TVA which could produce some initial capacity by 1983. A new storage facility at an unspecified site, referred to as "Greenfield", could probably not be designed, licensed, constructed and available until about 1984. Based upon these estimates, a combination of the above storage options could be utilized to meet projected U.S. and foreign spent fuel storage requirements.

As I mentioned before, the Administration plans to submit spent fuel storage legislation for early consideration by this Congress. In broad outline, this legislation would extend to DOE the authority to accept and take title to commercially generated spent fuel, acquire storage facilities, extend NRC licensing authority to these facilities establish a one-time char to cover all government costs for storage and disposal, and establish a financial management fund to provide clear accountability to the public regarding the spent fuel program.

In support of this legislative package, DOE has issued for public comment three draft environmental impact statements on the storage of U.S. fuel, foreign fuel, and the fee to be charged for storage and disposal. These have been separately provided to the Committee.

DOE has also published preliminary estimates of the one-time storage and disposal charge. Based upon present estimates of capital and operating costs, the charge was calculated to be $117/Kg for disposal and $232/Kg for storage and disposal. This represents a cost of about .47 and .93 mills per KWH respectively. A typical 1000 Mwe light water reactor discharges approximately 30 metric tons of spent fuel per year, in which case, the annual cost for storage and disposal would be about $7 million. The report containing both the estimates and the methodology used, has also been separately transmitted to the Committee.

Mr. Chairman, I would like to conclude by stating that the Administration is making every reasonable effort to assure availability of adequate, economical and environmentally sound storage capacity for spent fuel. We look forward to working with Congress on the enactment of the spent fuel storage legislation so that this program can proceed in a timely, efficient manner.