

## THE DEPARTMENT OF ENERGY'S PLANNED MONITORED RETRIEVABLE STORAGE FACILITY IS UNLIKELY TO BE OPERATING BY 1998

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### ABSTRACT

The Department of Energy (DOE) plans to begin accepting spent nuclear fuel from commercial utilities beginning in 1998. Whether DOE is legally obligated to take delivery of this waste at that time is unclear. If utilities successfully sue DOE for their additional storage costs, however, any compensation to some utilities is likely to be inequitable to other utilities. Because a geologic repository for waste disposal will not be available before 2010 at the earliest, DOE can begin accepting spent fuel in 1998 only if a Monitored Retrievable Storage (MRS) facility is operating by then. For a number of reasons, an MRS facility is not likely to be operating in 1998, but DOE has not prepared any contingency plans. In addition, DOE is developing transportation casks (containers) to meet that same date, but will probably not need them for at least 10 more years. To address the unlikelihood of an MRS facility in the 1998 timeframe, GAO recommended against further funding of site-related activities and cask development at least until a state or Indian tribe has agreed to host the facility. GAO also, among other things, recommended that DOE develop contingency plans in case it cannot begin accepting spent fuel in 1998 and suggested that the Congress may wish to consider legislation addressing this possibility.

### INTRODUCTION

The Nuclear Waste Policy Act of 1982 (NWSA) required DOE to enter into contracts with nuclear utilities to accept their waste for permanent disposal. At that time, it was anticipated that a geologic repository for this purpose would be available in 1998. Now, however, DOE does not expect the repository to be operating before 2010. NWSA also states that long-term storage of highly radioactive waste in MRS facilities is an option for safe and reliable waste management. On this basis, the act directed DOE to develop and submit to the Congress a proposal to site and construct one or more MRS facilities for spent-fuel storage.

Next, the Nuclear Waste Policy Amendments Act of 1987 authorized DOE to, among other things, build an MRS facility. However, because the Congress was concerned that the facility might become a substitute for a permanent repository, the amendments link development of an MRS facility to progress in developing a permanent repository. For example, DOE may not select a site for an MRS facility until the Secretary of Energy has recommended to the President the approval of a repository site, and DOE may not build an MRS facility until the Nuclear Regulatory Commission (NRC) has authorized construction of the repository. The amendments also created the independent position of nuclear waste negotiator to work out the terms and conditions under which a state or Indian tribe would agree to host an MRS facility or a repository. Such an agreement would have to be enacted into federal law.

DOE plans to develop the MRS facility to begin accepting utilities' spent nuclear fuel in 1998 and is developing high-capacity casks for use in shipping spent fuel by truck and by rail and/or barge. DOE anticipates that the new, high-capacity casks would be able to accommodate 75 to 85 percent of all spent fuel shipped from commercial reactors.

In the first of two recent reports, the U. S. General Accounting Office (GAO) reviewed the alternatives of continued spent fuel storage at utilities' reactor sites and transferring waste to an MRS facility. GAO assessed the (1)

likelihood that an MRS facility will be operating by 1998, (2) legal implications if DOE is not able to take delivery of wastes then, (3) propriety of using the nuclear waste fund to reimburse utilities for storage capacity added to nuclear plant sites after 1998 if DOE is unable to accept spent fuel then, (4) utilities' ability to store their wastes on-site until a repository is operating, and (5) relative costs and safety of the two storage alternatives. (1) In a second report, GAO addressed the pace and direction of DOE's program to develop new spent fuel transportation casks. (2) I will now discuss the results of these two reports.

### DOE PLANS TO HAVE AN MRS FACILITY BY 1998

In 1989, DOE reaffirmed its support for an MRS facility as an integral part of the nuclear waste management system. If developed according to DOE's plans, an MRS facility would permit DOE to begin storing utilities' spent fuel in 1998. However, the MRS facility could begin operating in 1998 only if the statutory linkages contained in the amendments were removed or modified. With the linkage between the MRS facility's and the repository's schedules, an MRS facility could not be available earlier than 2007.

DOE's proposed legislation to implement the national energy strategy included a provision to remove the linkage between an MRS facility and the repository. The Congress has not acted on this proposed legislation. Also, rather than attempting to obtain a site for the facility, DOE is relying on the nuclear waste negotiator to find a willing host state or Indian tribe and facility site. DOE has assumed that the negotiator will identify a voluntary host, negotiate an agreement that would not contain the existing linkage to the repository's schedule, and obtain the Congress' approval of the negotiated agreement by the end of 1992.

To assist potential negotiations, in June 1991 DOE formally invited states, tribes, and local governments to apply for financial grants of up to \$100,000 to study the feasibility of siting an MRS facility within their jurisdictions. These grants are intended to assist prospective hosts in making an informed

decision on accepting the facility. Between October 1, 1991, and January 7, 1992, five tribes and two counties applied for such grants, an DOE had approved three of the applications by the latter date.

#### **AN MRS FACILITY IS UNLIKELY BY 1998**

For a number of reasons, an MRS facility is unlikely to be operating by 1998 despite the recent interest by several Indian tribes and counties. One reason is the linkage of the MRS facility to the repository. DOE is optimistic to assume that the Congress will reverse its position on the need to ensure repository progress--enacted in the 1987 amendments in the form of the MRS facility/repository linkage--by removing or modifying this linkage. Also, it is unlikely that a state or tribe would agree to host an MRS facility without some form of assurance--comparable to that provided by the linkage to the repository's schedule--that the waste will eventually be removed from the site. Another reason is that DOE's past experience in trying to site nuclear waste facilities indicates that a willing host for the MRS facility will be difficult to find. Finally, even if a state or tribe volunteers to host the facility, it may be difficult to meet DOE's schedule for the MRS facility because of the expected time required to complete negotiations and obtain congressional approval.

#### **De Facto Repository**

The possibility that an MRS facility would become a permanent storage site--a *de facto* repository--by removing the impetus for permanently disposing of nuclear waste in a repository was a major concern throughout the legislative history of NWSA. A prospective host for the facility would likely share this concern because spent fuel, once placed in an MRS facility for storage, could remain there until a repository is completed. To assure that spent fuel would be removed from an MRS facility in a timely manner, the Congress, in the NWSA amendments, linked MRS facility development to the repository's schedule so that the facility could not be constructed and operate without specific progress towards a repository.

DOE's MRS policy assumes that a potential host state or Indian tribe will agree to, and the Congress will approve, an agreement allowing an MRS facility to begin operating as early as 1998. Therefore, DOE's conviction that an MRS facility will be available by 1998 is based on the assumptions that (1) the Congress will reverse its position on the need for the linkage to ensure progress towards a repository and (2) a state or tribe will accept an MRS facility that can be operating in 1998 but with no assurance that the waste will ever be removed. According to the negotiator, a state or tribe is unlikely to agree to host an MRS facility unless the negotiated agreement contains some type of assurance that the facility will not become permanent. However, any assurance short of the link to the repository that may be acceptable to the host may not be sufficient to convince the Congress that the MRS facility would not become a *de facto* repository.

#### **States' and Tribes' Reluctance**

The key barrier to siting an MRS facility is the reluctance of states and tribes to accept it. DOE's past experience with Tennessee provides an example. In April 1985, DOE identified three sites in Tennessee for an MRS facility. Although the local community at the primary site near Oak Ridge sup-

ported the proposed facility, state officials successfully opposed siting the facility in the state.

Since DOE's initial attempts at siting an MRS facility, the scheduled date for opening a repository has slipped 12 years, and a number of technical and political factors could cause this date to slip even further. Because of the uncertainties in the repository's schedule, states and tribes may be even more reluctant now, despite the applications for feasibility grants, to host an MRS facility out of concern that the facility might become a permanent storage facility. For example, in its application for a feasibility grant, the Mescalero Apache Tribe of New Mexico stated that it would consider moving ahead with a formal application to host an MRS facility if its assessment convinced it that the facility would, among other things, be temporary in nature.

#### **Protracted Negotiation and Approval Process**

To overcome states' and Indian tribes' opposition to hosting an MRS facility, DOE is relying on the nuclear waste negotiator to identify a willing host and negotiate an agreement. According to DOE, an agreement without the current linkage to the repository's schedule must be negotiated and approved by the Congress by late 1992 for an MRS facility to begin operating by 1998. A number of factors, however, make successful siting and operation of an MRS facility by 1998 through this approach doubtful.

According to the nuclear waste negotiator, even with an aggressive effort it is unlikely that he can negotiate and gain approval of an agreement by late 1992. While the negotiator is aware of DOE's objective, his negotiation effort is not driven by that goal. Since our September 1991 report, the negotiator has said that he has become optimistic about the possibility of successfully completing a siting agreement because of interest expressed in the form of applications for feasibility grants to study the siting of an MRS facility. However, it is important to note that the governors of some states in which grant applicants are located have expressed either reservations or outright opposition toward siting an MRS facility in their states. This is significant for two reasons. First, the negotiator has said that, because it is uncertain that an agreement could ever be implemented without the support or permission of the state in which a nuclear waste facility is located, the negotiator should negotiate and consult with both the governor and tribal leaders in an instance where a possible site is located on Indian lands. Second, only the governor of a state, or his designee under state law, is authorized by NWSA, as amended, to negotiate for a site within a state that is outside Indian lands.

#### **DOE'S LEGAL RESPONSIBILITIES ARE UNCLEAR**

If an MRS facility is not operating by January 31, 1998, DOE will be unable to meet what utilities consider to be its commitment to begin accepting *their* spent fuel by that date. NWSA, as amended, the relevant legislative history, and DOE's disposal contract are not clear on what the potential implications of this occurrence would be. Yet, it appears that the Congress linked the 1998 date to an operating facility. However, if DOE cannot begin removing utilities' spent fuel by 1998, the utilities may sue DOE.

Under NWSA, the owners and generators of spent nuclear fuel have the primary responsibility to store waste until DOE can dispose of it. Utilities are also responsible for paying all costs of at-reactor storage and for paying fees for DOE



storage in an MRS facility and permanent disposal in a repository. Regarding DOE's acceptance of this spent fuel, the act requires DOE's contracts with utilities to state that

- after repository operations begin, DOE will take title to (legal ownership of) spent nuclear fuel and
- in return for fees paid, DOE will dispose of the spent fuel beginning not later than January 31, 1998.

DOE's disposal contract, however, states that the disposal "services" DOE will provide shall begin "after commencement of facility operations, not later than January 31, 1998." The contract defines a "facility" as either a repository or an MRS facility. The contract does not state which of the two phrases--"after commencement of facility operations" or "not later than January 31, 1998"--takes precedence if a facility is not operating by 1998. DOE believes that the contract obligates it to take possession of spent fuel by the end of January 1998 only if either a repository or an MRS facility is operating at that time.

DOE is likely to be challenged in court if it is unable to accept spent fuel by 1998. There are a number of ways a court might interpret DOE's responsibilities under the act and the disposal contracts. One interpretation is that it is necessary to have an operating repository for DOE to meet both requirements stated in NWSA. This interpretation is based on a number of factors: (1) DOE must first accept title to the waste before it can dispose of it, and NWSA states that DOE must take title to the spent fuel only after a repository begins operations; (2) NWSA's definition of disposal--"emplacement in a repository"--implies that a repository would be available; and (3) the legislative history suggests that NWSA's requirements assumed that a repository would be operating by 1998. Under this interpretation, DOE would not be obligated to accept title to or dispose of nuclear waste until a repository is operating. In the contract with utilities, DOE has expanded this requirement so that its obligation begins when either a repository or an MRS facility begins operating.

This interpretation is consistent with the Congress' decision to establish, in the 1987 amendments, a link between the schedules for an MRS facility and a repository. The Congress' action suggests that it found DOE's ability to begin storing spent fuel by 1998 less important than ensuring continued progress on a repository. In DOE's first amendment to its mission plan--the principal strategy document for the program--submitted to the Congress in June 1987, DOE stated that it did not expect to receive a repository construction permit until early 1998 or to operate the repository until 2003. Therefore, the only means by which DOE could accept spent fuel in 1998--the date the Congress included in the NWSA on the expectation that the repository would be ready then--was an MRS facility. However, to ensure continued progress toward completing the repository, the 1987 amendments linked development of an MRS facility to progress on the repository. Given DOE's estimate at the time that a repository construction permit would not be issued until early 1998, the linkage made it impossible for an MRS facility to be operating by 1998. These events suggest that the Congress intended to subordinate the importance of the 1998 date and that DOE is not obligated to take title to or dispose of waste in 1998 if no facility is available.

Therefore, on this basis, if utilities sue DOE because it is unable to store or dispose of their nuclear waste in 1998, DOE

could respond that it is not obligated to do so unless there is some facility operating. Alternatively, DOE could argue that it was impossible for it to perform under the act and the contract. Another possibility is that DOE might invoke the "unavoidable delays" provision of the contract which states that neither DOE nor the utilities are liable for damages caused by the failure to perform their obligations if this is due to causes "beyond the control and without the fault or negligence of the party failing to perform."

In 1987, DOE stated that if program delays prevent it from providing disposal services by January 31, 1998, then the contract's delay provisions would go into effect. According to DOE, if avoidable delays--those within the parties' "reasonable control"--occur, the contract allows for an equitable adjustment of charges and schedules to reflect additional costs incurred. DOE stated that unavoidable delays would result in no financial liability and require only a readjustment of schedules to accommodate the delays. More recently, however, DOE stated that it has made no policy decisions on what it would do if no DOE facility is available by 1998 and has not explored how and under what conditions the contract's "unavoidable delay" provision might be implemented.

#### INEQUITIES COULD RESULT IF UTILITIES SEEK REIMBURSEMENT

Despite NWSA's requirement that utilities provide for, and pay the costs of, storage at reactor sites, utilities have stated that if DOE cannot begin accepting spent fuel by 1998, they may demand financial reimbursement for the additional on-site storage costs they would incur after that date. However, such reimbursement would be inequitable.

Reimbursement to utilities needing additional storage, either directly from the nuclear waste fund or through credits against future fee payments, would distribute benefits unequally among utilities. Because utilities' storage capacity situations are different, the benefits of reimbursement for additional storage capacity needed until DOE can begin accepting the waste would also be different. Some utilities--particularly those with newer reactors--have invested in enough on-site storage capacity to accommodate all of their spent fuel and, therefore, will not need additional capacity in the foreseeable future. Other utilities, however, will need to add more storage capacity if DOE does not begin to remove their spent fuel in 1998. Between these two extremes are other utilities that will need to add varying amounts of storage capacity. Because all of these utilities pay fees into the nuclear waste fund at the same rate, using the fund to reimburse those utilities needing additional storage capacity on site after January 1998 would result in all utilities' subsidizing the costs of additional storage at some reactor sites. Thus, utilities that already have sufficient on-site storage capacity would essentially pay for storage capacity needed by other utilities.

A secondary effect of using the nuclear waste fund to compensate utilities would be a potential shortfall in funds for constructing and operating the nuclear waste management system. If utilities were reimbursed from the fund, DOE would need to ensure that sufficient additional funds were available to cover the costs of constructing and operating the repository and/or the MRS facility. If, as a result of the reimbursements, DOE had to increase the disposal fee, it would increase disposal costs for all utilities. Thus, utilities not benefitting

from the reimbursement would again be penalized by having to pay higher fees for benefits accruing to others.

In any event, we agree with DOE's view that the nuclear waste fund cannot legally be used to finance on-site storage of wastes. This also suggests that DOE cannot reimburse utilities through credits against payments into the fund. Implementing either form of compensation would require new legislation.

The most equitable approach would be for utilities to continue to pay their own spent fuel storage costs until DOE can begin removing it. Each utility would expand its storage capacity on-site as needed at its own expense. By this means, a given utility--and its ratepayers--would directly benefit from its own expenditures. In addition to being the most equitable approach, it is also consistent with NWPA, which assigns the utilities the responsibility for storing the spent fuel and paying the associated costs.

#### **DOE HAS NOT ANNOUNCED CONTINGENCY PLANS**

DOE has been reluctant to address the possibility that an MRS facility may not be operating by 1998. For example, in a February 1991 response to our questions on its obligation to accept and dispose of spent fuel, DOE said it expected to be able to accept waste at an MRS facility beginning in 1998 and had not considered what actions it may take if it cannot accept spent fuel by then or whether the contract provision dealing with delays may go into effect if no facility is available. Furthermore, DOE has not determined what it will do if the negotiator cannot find a voluntary host for the MRS facility nor determined how it should respond if utilities sue DOE and demand compensation.

According to DOE, it internally evaluates contingencies on a continuing basis and intends to select and implement one or more contingency plans by the end of 1992 if a negotiated agreement on an MRS facility has not been enacted into law by the Congress.

#### **STORAGE CAPACITY, COSTS, AND SAFETY NOT A CONCERN**

Although an MRS facility is critical to DOE's ability to accept spent fuel in 1998, from the perspective of utilities' storage capacity, the absence of the facility is not considered a cause for concern. Virtually all utilities are expected to be able to expand their storage capacities to accommodate all of their spent fuel. In fact, even if an MRS facility were to begin operating by 1998, some utilities will have to increase their storage capacity before that time and are already doing so. Although it is unlikely that any utility will need emergency storage, it would be prudent to prepare for such a contingency by providing a mechanism for limited emergency storage.

Evidence indicates that cost and safety factors are also of little concern. Studies show that the differences between the total costs of on-site storage versus storage at an MRS facility are insignificant. (3) Given the uncertainty of the ultimate costs of dry storage, the relatively minor differences in costs do not provide a meaningful basis for selecting one alternative over the other. Similarly, spent fuel can be safely stored at either reactor sites or an MRS facility for extended periods and can continue to be shipped safely. Radiological risks of storing and shipping spent fuel are very low. Moreover, the minor differences in estimated risks between on-site and MRS

facility storage are so low as to be insignificant in choosing one option over the other.

#### **TRANSPORTATION CASK DEVELOPMENT IS PREMATURE**

DOE plans to develop high-capacity transportation casks in time to meet its goal of accepting spent fuel at an MRS facility beginning in 1998. Because it is unlikely that the MRS facility will be available by then, utilities will have to continue storing spent fuel at their nuclear plants at least until an MRS facility has been developed or DOE has constructed a repository. Consequently, DOE will not need new transportation casks as early as its current cask development program schedule would provide them.

Without an MRS facility, DOE probably will not need a large-scale cask procurement program for another 10 years. Thus, by stopping this program now, DOE has an opportunity to conserve funds until there is a clear need to develop casks. In conjunction, a pause would give DOE time to address utility industry concerns, such as fully considering industry transportation experience and DOE's study of the physical interface between individual nuclear facilities in designing DOE's transportation system.

#### **CONCLUSIONS**

The 1987 NWPA amendments link development of an MRS facility to progress on a repository. Consistent with DOE's current schedule for developing a repository, this would allow an MRS facility to begin operating no earlier than 2007. DOE, however, wants to develop an MRS facility to begin storing utilities' spent fuel by 1998. To achieve this objective, DOE is relying on the nuclear waste negotiator to negotiate, and the Congress to approve, an agreement with a state or Indian tribe that would remove or modify the linkage. According to DOE, if this has all occurred by the end of 1992, DOE would be able to develop the facility by 1998.

In our opinion, DOE has embraced a set of overly optimistic assumptions concerning the negotiator's timely success in completing and gaining congressional approval of an agreement that removes or modifies the links between an MRS facility and a repository. Despite evidence that an MRS facility is not likely to be operating in 1998, DOE has not determined what it will do if the facility is not available then. Planning for such a contingency is important because DOE's likely inability to begin accepting utilities' spent fuel by 1998 may trigger lawsuits and requests that DOE compensate utilities for any new storage capacity needed after January 31, 1998.

In the event that utilities sue DOE, it is uncertain how a court would interpret DOE's legal responsibilities. Therefore, legislation could help clarify such issues as whether DOE is obligated to begin accepting spent fuel by January 31, 1998, and whether utilities are responsible for storing their spent fuel until a repository or an MRS facility is available. Such clarification at an early date might help avoid protracted lawsuits by utilities against DOE that could be detrimental to the entire nuclear waste disposal program.

Legislation would also be needed to compensate utilities from the nuclear waste fund for additional storage capacity needed after January 1998. However, providing such compensation raises significant questions about the equity of the treatment of utilities and ratepayers. The most equitable approach, consistent with NWPA, is for utilities to continue to



pay the costs of storing their spent fuel on-site until DOE can begin removing it.

DOE's conviction that an MRS facility will be available by 1998 also drives the pace and direction of DOE's cask development program. In the absence of an MRS facility, DOE will not need to begin shipping utilities' spent fuel until at least 2010. Therefore, DOE will probably not need a large-scale cask procurement program for 10 or more years. Consequently, DOE has an opportunity to reevaluate the course and direction of the cask development program while conserving funds until there is a clear need to develop casks. With additional time available, DOE can evaluate important issues that may affect cask designs.

### RECOMMENDATIONS

To address the unlikelihood of an MRS facility by 1998, GAO

- recommended that the Congress withhold any future funds for MRS facility site-related activities at least until a state or tribe has agreed, in principle, to host a facility at a specific site and
- suggested that the Congress may wish to consider legislation to address (1) the likelihood that DOE cannot begin accepting nuclear waste by 1998 and (2) the issue of equity in reimbursing utilities for their additional storage costs.

GAO also recommended that DOE develop contingency plans for the likelihood that it will not be able to accept utilities' nuclear waste in 1998. GAO noted that these plans

should be discussed in DOE's revised mission plan for the nuclear waste program and should address DOE's strategies for future MRS-facility siting activities and working with utilities and/or the Congress on a solution. DOE's September 1991 draft mission plan amendment did not provide such plans.

To address the premature development of transportation casks, GAO recommended that DOE

- limit funding for the cask system development program to the amount needed in fiscal year 1992 to complete cask designs and
- use the time until a state or tribe has agreed to host an MRS facility to, among other things, factor the results of DOE's facility/cask interface study into cask designs.

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