

One of the biggest long-term challenges of owning a shutdown nuclear power plant is the management of spent nuclear fuel. With the Department of Energy's failure to build a repository and collect spent nuclear fuel from the nation's reactor sites, utilities have been forced to expand their spent fuel pools and construct costly dry storage facilities. With progress toward constructing a repository as far off as ever, utilities are essentially forced to manage spent nuclear fuel into the indefinite future (although certain consolidated storage options exist, as discussed).

But with the negatives comes a positive. Because the DOE contracted to accept spent nuclear fuel pursuant to the Nuclear Waste Policy Act in exchange for nuclear operators funding the Nuclear Waste Fund for constructing a final repository, the DOE is now on the hook for its failure to fulfill its contractual and statutory obligations and pick up the spent fuel. As a result, the department pays utilities back (either through a settlement or litigation process) for the vast majority of costs associated with spent fuel management, including dry storage. The DOE's obligation to fund spent fuel management, essentially backed by the full faith and credit of the U.S. government, allows new entrants to take the risk of managing and taking ownership of

spent nuclear fuel, assured of a guaranteed funding source.

The development of CISFs in New Mexico and West Texas helps provide a concrete time horizon in which spent fuel can be moved from reactor sites. Fundamentally, however, it is the DOE's general commitment to fund spent fuel management that allows the decommissioning industry to innovate while longer-term solutions to the storage of spent nuclear fuel are worked out. Moreover, it is the DOE's legal obligation to fund spent fuel management and eventually take title to spent nuclear fuel that underpins these private efforts to develop CISFs.

The above is not an exhaustive list. There are other aspects of the U.S. nuclear regulatory framework that facilitate the growth of third-party decommissioning, including protection from nuclear liability under the Price Anderson Act. However, the three items above have played a critical role in the development of innovative nuclear decommissioning models in the United States.

Opportunities abroad

Success and growth in the United States raise the question of opportunities abroad. Indeed, as much as decommissioning is a growth market in the United States, the global nuclear fleet is

four times larger than the U.S. fleet, and the phaseout of nuclear power in certain countries (e.g., Germany and Taiwan), combined with the anticipated shutdown schedule for nuclear reactors in Japan, creates significant opportunities for U.S. decommissioning contractors.

The nuclear decommissioning market in Japan is expected to expand to over \$30 billion during the next decade. According to one count, approximately half of the Japanese civilian nuclear fleet is permanently shut down. Within the next decade, as many as 10 more reactors could shut down due to economic pressures from costly new regulatory requirements. Decommissioning is rapidly becoming one of the major business opportunities in the nuclear industry in Japan.

At the same time, Japan does not yet have significant experience with decommissioning and recognizes the benefits of leveraging the expertise of U.S. contractors. U.S. companies will therefore have an important role to play in the Japanese reactor decommissioning market.

In Germany, 10 nuclear reactors have been shut down, and the government has announced its plan to shut down its entire fleet. Although German utilities have experience with decommissioning, significant opportunities exist to leverage U.S. expertise gained from many con-

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