

If we don't approve Yucca Mountain, then what do we do with the wastes?

H.O.S.S. it!

Hardened On-Site Storage Nuclear Waste Management Plan

It has been pointed out that even if no more high-level radioactive wastes were produced, we would still have to do something with the wastes we have, until such time as a final repository were opened. It's also obvious since 9/11 that the current safety and security practices employed to manage high-level radioactive wastes at reactors are inadequate and unacceptable. "What is the alternative?" environmentalists are asked.

Alternatives exist — "HOSS" is one. Many feel it's better to be deliberate and not err, than implement an obviously flawed plan just to say "we had to do 'something.'" With high-level radioactive wastes, if we do "something," it must be the "right" thing, because we won't get a second chance to be wrong. D.C.-based Institute for Energy and Environmental Research outlines a program to manage nuclear wastes better in the short-term while looking for a genuine long-term solution.

IEER advocates the following program be carried out by an institution that does not have the conflict of interest that the U.S. Department of Energy (DOE) does, and under more stringent public health and environmental protection standards than those currently in effect.

INTERIM MANAGEMENT

Interim Hardened On-Site Storage (HOSS) should be used for all spent fuel that can be moved out of pools. Pool storage should be minimized. HOSS would be different than spent fuel pools and dry casks now used. No new above-ground dry storage of the present varieties should be licensed. Current dry storage should be converted to HOSS. The Federal government should pay for HOSS at closed power plant sites since it has defaulted on its obligation to begin taking the waste on January 31, 1998, and has large amounts of ratepayer money dedicated to waste management that it has not spent.

GOALS

Hardened On-Site Storage should be able to withstand most terrorist attacks without significant off-site releases. A second level goal is to prevent catastrophic off-site releases in case of even severe attacks. There could be defense-in-depth as part of the system. The technology to accomplish HOSS is available.

INTERIM HARDENED ON-SITE STORAGE

HOSS should meet the following criteria:

1. It should not result in catastrophic releases. It should resist almost all types of attacks. The amount of releases projected in even severe attacks should be small enough that the storage system would be unattractive as a terrorist target.
2. It should be able to withstand a direct hit by a large commercial airliner full of fuel or anti-tank weapons without catastrophic offsite releases.
3. The individual canister locations should not be easily detectable from offsite.

On-site storage would be needed for around 50 to 60 years — not much different from what is projected to occur at present.

LONG-TERM MANAGEMENT

The long-term repository plan should proceed as follows with 10 years of the following scientific and engineering work:

1. Research on natural geologic conditions that retard the movement of radionuclides for long periods.
2. Development of materials that mimic these natural geologic conditions ("Natural analog" materials).
3. Research on geologic environment types that would match the characteristics of these natural analogs.
4. Intensified basic scientific research on the properties of the most important radionuclides under a variety of laboratory conditions.

After this initial work, the process of selecting two or three repository and natural analog types would be initiated for concentrated work (10 years).

Then site selection (10 years).

If the process is sound, disposal could in principle happen in the 20 years to follow. The total time for complete disposal of fuel from existing power plants (40-year license) would be roughly 50 years, possibly 60.

If the power plants are closed down the overall timetable would not be longer than envisioned for Yucca Mountain now.

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