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Walt

Richard Valles
Director, T.M. 2 Support
Nuclear Regulatory Commission
Washington, D.C. 20555

March 19, 1975

Dear Mr. Valles:

Will you please send me a copy of the current safety evaluation or environmental assessment conducted on the proposed Tisham Spent Fuel Storage Building in Idaho?

If the review is under way, will you let me know how I can be kept advised of any developments? I am interested in the safety of the facility and the health of the surrounding population.

H. PAUL FRIEDMAN

Secretary
J. Paul Friedman
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A Year After Accident, Three Mile Island Is Far From Cleaned Up Radioactive Water and Gas Remain, as Technological And Other Delays Arise Could Core Heat Up Again?

By JOHN R. EMSHWILLER

Staff Reporter of THE WALL STREET JOURNAL
HARRISBURG, Pa.—A dangerous phase of the Three Mile Island accident is yet to come.

Tons of deadly radioactive material and about a million gallons of radioactive water still sit inside the closed nuclear generating station, situated near here on the Susquehanna River. Crews have been cleaning up the mess since shortly after the accident occurred almost a year ago. But the work has run into troubles from the start.

Now the cleanup is months behind schedule. Decontamination equipment has failed to perform properly. Radiation protection at the site has been loose, resulting in overexposure of some workers. The project has run into roadblocks from federal regulators and from worried local residents.

If the situation doesn't improve, serious new problems could arise. Large parts of the plant are too contaminated to enter for maintenance work, and pieces of equipment have been failing for lack of care. If vital elements of the reactor-cooling or radiation-containment systems break down some fear a reheating of the reactor core or the release of new radiation into the environment.

"Lots of Hazards"

"This is going to be a tough, dirty job with lots of hazards," says Clifford L. Jones, head of the Pennsylvania Department of Environmental Resources.

How well the job is done could affect the

future of nuclear power. After the trauma of the accident itself, nuclear-energy advocates hardly relish the prospect of a botched cleanup job. "We don't want to leave a monument to the worst nuclear accident in our commercial history," says Carl Walske, president of the Atomic Industrial Forum, a major nuclear-industry trade group.

By any measure, the task is immense. Radioactive debris, including the partly melted nuclear-fuel core, must be carefully removed and disposed of. Lingered radiation will have to be thoroughly scrubbed off walls and equipment by workers wearing protective gear, who will use everything from soap and water to sandblasters.

About 1,700 workers are at the site. Some are building or outfitting nearly a score of new structures to help in the cleanup. These range from a laundry for decontaminating clothing to water tanks that can hold a total of one million gallons.

Years to Go

General Public Utilities Corp., the plant's owner, is in charge of the effort, which involves experts from dozens of companies and government agencies. GPU estimates that the cleanup will take three to four more years and cost \$300 million. Restarting the plant, if that can be accomplished, would cost an estimated \$100 million more.

Officials involved in the cleanup say that its rocky beginning was probably unavoidable and that progress is increasing. No one, they contend, has ever undertaken a decontamination job quite so demanding. "This is a unique situation. Given that, I'm not dissatisfied with the ground we've covered," says Robert C. Arnold, head of GPU's nuclear operations.

Much of the work so far has focused on the decontamination of buildings near the reactor. In the accident last March 28, a series of mechanical failures and operator errors caused a loss of cooling water and a severe overheating of the reactor. The auxiliary buildings took in some 400,000 gallons of relatively low-level radioactive water.

Filtering the Water

Cleaning up that water has proved difficult. Three outside contractors came up with a system for filtering out the radiation to make the water safe enough for disposal, but the system hasn't lived up to expecta-

tions. Large amounts of water have had to be cleaned more than once. As a result, only about 40% of the water has been decontaminated. The task was supposed to be finished by now.

GPU's Mr. Arnold concedes that the water cleanup has been "touchier than anticipated," but he says the problems are being worked out. With proper preparations, he says, the system now is "very effective." Others are more critical. One expert calls the filtering system "a botch."

Also giving GPU headaches is the goal of protecting workers from radiation. A study completed by the federal Nuclear Regulatory Commission last December concluded that the site's radiation-protection program had "substantial deficiencies" and required "significant corrective action."

That study followed a mishap last August in which six workers were overexposed to radiation while fixing a leak of radioactive water in one of the auxiliary buildings. One worker got a dose about eight times greater than federal limits allow. In all, 10 workers have sustained high radiation doses, but GPU's Mr. Arnold says their health doesn't seem to have been affected.

While the company is working to improve the radiation protection, everyone agrees that more progress is needed, given the tasks ahead. The biggest and most hazardous of these is cleaning up the reactor and the 203-foot-tall containment building that surrounds it.

Nobody has been inside the containment building since the accident—and with good reason. Its atmosphere is full of radioactive krypton gas released from the fuel core during the episode. Also, about 500,000 gallons

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of contaminated cooling water that was spilled covers the building floor. Some of that water is continually evaporating and then condensing at the top of the building, so a constant radioactive rain falls inside.

The krypton is a particular worry. Prolonged stays in the building are too dangerous as long as the gas remains. Even short visits will require workers to wear special protective clothing and respirators.

Will Krypton Be Released?

GPU and others want to release the krypton into the environment gradually through vents in the containment building. The company says the releases wouldn't be large enough to endanger the public, but the Nuclear Regulatory Commission hasn't yet given permission to take that step. The agency did allow workers into an air lock adjoining the containment building last week as a first step toward eventually entering it.

Some state and GPU officials fear that time is working against them—that if action isn't taken soon, krypton in the building may get out anyway. Currently, equipment inside is keeping the air pressure below that of the outside atmosphere. If that machinery should fail, the pressure inside the building would rise and krypton would escape through small cracks in the wall. "These plants aren't designed for zero leakage," the company's Mr. Arnold says. A recent state report warned that such uncontrolled krypton releases could pose a public health risk.

The krypton will have to be removed before work can start on cleaning the reactor cooling water and removing the more than 100 tons of nuclear fuel in the core.

Handling the badly damaged core will be particularly tricky. Care will be necessary to make sure the fission process doesn't start again and lead to a dangerous power surge in the reactor. Removing the core "is probably the touchiest and most critical operation we have," says Mr. Arnold.

Here, too, time may be working against the cleanup. The seven feet of water inside the containment building covers part of the reactor cooling system, and there is concern that important equipment is being corroded. While fission has been stopped since the accident, the core is still producing heat. If the ability to cool it is lost, Mr. Arnold says, the core could heat up enough to cause further damage.

Other experts disagree about the dangers posed by the crippled plant. John Collins, the Nuclear Regulatory Commission's senior official at the site, thinks there isn't enough heat left in the core to present any significant risk. He also doubts that any large amounts of krypton would leak out even if equipment failed. Hence the NRC, while it would like the cleanup to proceed with dispatch, doesn't feel the same urgency that the state and the company do.

Such varying analyses seem to be part of a growing tension between the NRC and other parties involved in the cleanup effort. State and company officials contend the NRC is being overly cautious. "Every time there is a problem, they set up a task force to look at it. So everything is going at a

snail's pace," says Thomas Gerusky, director of the Pennsylvania Bureau of Radiation Protection.

NRC officials respond that performance problems by GPU and its contractors have helped slow the pace. Nonetheless, the agency is looking at whether some cleanup work could be speeded.

Local opposition has already been a factor in the decontamination work. For instance, the company wants to return water after it is processed to the Susquehanna, but a lawsuit from a nearby town has helped block that. GPU officials are making a major effort to win back a citizenry badly shaken by the accident, with Mr. Arnold alone spending about three evenings a week explaining the cleanup effort to groups of local residents.

Geiger Counters

But the company clearly has a way to go. Some residents still monitor the plant, from a distance, with their own Geiger counters. "That cleanup has me scared to death," says Patricia A. Smith, who after the accident quit her job as a sales representative for a local employment agency to work full time as an antinuclear activist.

Periodic snafus at the site haven't helped the company's popularity. Last month, a leak inside the plant led to a small but well-publicized release of radiation to the environment. And late last year the company inadvertently sent some radioactive material to be burned with regular garbage at a local incinerator. Fortunately, the garbage shipment was turned back because it wasn't properly packaged.

Eventually, an estimated 2,000 truckloads of the waste will have to be taken away. The only repository that currently will accept it is 2,700 miles away in Washington state.

GPU still must find a place to pour all the waste water at the site. Mr. Arnold once suggested that if the Susquehanna River wasn't available, the water might be shipped away and dumped "in somebody else's river." Now he says that idea doesn't appear feasible.