

Contractor takes over cleanup of SRS waste

By Rob Pavey | Staff Writer
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Its consistency ranges from syrup to salt to peanut butter -- yet its radiation is many times the amount needed to be deadly.

Starting today, Jim French is responsible for cleaning it up.

"It's a very difficult job, very select in technology and very unique in the experience we need," said Mr. French, the president of Savannah River Remediation, which takes over today as Savannah River Site's high-level liquid waste contractor.

The company's 1,765 employees will be working to empty a series of underground tanks at the site's H and F areas that contain 36 million gallons of decaying waste left behind by decades of Cold War nuclear weapons production.

"There were originally 51 tanks out there, and in 1995-96 when I was here before, I was involved in closing two," Mr. French said. "That leaves 49."

Of those remaining tanks, 22 were made with a single-wall construction technique that has left them vulnerable to leaks.

"Because those are the oldest ones and the greatest risk for leaks, we're committed to closing 22 of those tanks in eight years," he said. "That is a huge challenge, and it's much more than what's been done anywhere in the (nuclear weapons) complex."

The waste is as varied as it is lethal.

"There is a supernate that's almost like a liquid," Mr. French said. "It's not quite the viscosity of syrup, but thicker than water. Then we have sludge, which has a peanut-butterlike consistency. And we have a caustic that turns into a salt. It sets up white and is crystalline in nature."

Disposal includes emptying the tanks, processing the waste and then filling in the aging, carbon-steel vats with a specialized grout and leaving the tanks buried forever.

One waste product is sludge, which is vitrified into a solid glass form and encased in stainless steel cylinders for permanent storage. "Just as with a bottle of wine there is a sediment that drops to the bottom; that's where sludge comes from," he said.

All the wastes are dangerous and require extensive precautions.

"The waste in there has a radiation signature today that precludes a human from even going in there," Mr. French said. "By NRC standards, they are hundreds of times more powerful than what a human could put up with."

Emptying and closing 22 tanks in eight years will require expedited activity in many areas outside the tank farms themselves, he said.

"If we're going to close that many tanks that fast, we have to step up the pace in all the other operations," he said. "That means more glass production at DWPF (the Defense Waste

Processing Facility); our sludge-preparation time has to go faster; tank-cleaning programs have to go faster; everything has to get moving forward faster to make that happen."

Complicating the cleanup project is that 12 tanks are leaking, although the leaks, or "weeps," are contained to prevent any material from entering the environment.

"With the early tanks that were made of carbon steel, some of those welds have leaked apart," Mr. French said. "Of the 22 we intend to close, 12 have leak sites. We keep water levels below leak site, and we manipulate tank levels to prevent leaking."

Each tank, he added, is 86 feet across and 44 feet deep, and all are buried 10 to 12 feet below ground level.

"Hanford (in Washington state) has 200 of these tanks and a much larger waste inventory than we do," Mr. French said. "While our 36 million gallons seems like a lot, Hanford is the granddaddy of them all."

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SRS LIQUID WASTE PROGRAM

NEW CONTRACTOR: Savannah River Remediation

WASTE TANK FARM LOCATION: H and F areas

HIGH-LEVEL RADIOACTIVE WASTE VOLUME: 36 million gallons

CONTAINERS: 49 tanks, each 86 feet wide and 44 feet deep

RENEWABLE CONTRACT: \$3.3 billion through 2015

OBJECTIVE: Empty and close 22 tanks in eight years

Source: U.S. Department of Energy