



TARGET: TENNESSEE



More Tritium for Bombs in the Watts Bar reactor in Spring City, TN

More Thermonuclear Secondaries for Bombs at the UPF in Oak Ridge, TN

NNSA announces Watts Bar plan:

- More Tritium for Bombs
- More Tritium in Drinking Water
- More Nuclear Waste

“It’s okay—it’s just a little bit of poison in your water.”

That’s the bottom line of the National Nuclear Security Administration’s plan to increase tritium production for nuclear weapons in the Watts Bar nuclear reactor in Spring City, TN. Spring City is about half way between Knoxville and Chattanooga; it draws its cooling water from the Tennessee River—and dumps the used, now contaminated with radioactive tritium water back into the Tennessee.

The Department of Energy first gave itself permission to produce bomb tritium in a commercial reactor in 1999, breaking a long-standing global taboo and erasing the line between civilian and military nuclear power. “It’s okay,” said the DOE, because we’ve decided that tritium doesn’t count. It used to, but it doesn’t any more. For us.”

DOE’s decision in 1999 came at the end of an Environmental Impact Statement process that admitted some tritium would be expected to leak out of the special rods inserted into the reactor into the cooling water and, eventually, into the Tennessee River. Just a tiny bit, they said: 1 curie per year per rod.

For comparison sake, it might be good to note the danger from radiation to humans is measured in trillionths (pico-) and billionths (nano-) of a curie.

Yikes!

Several years after the NNSA started making tritium in the Watts Bar reactor, they decided to check their predictions against reality. Whoops! It turns out the tritium rods were leaking three to four times more tritium than they had expected. They tried redesigning the rods, but it didn’t help.

So NNSA announced it would prepare

a Supplemental Environmental Impact Statement. That S-EIS, begun in 2011, has now been issued in draft form and is available for public comment. The comment period runs until September 22; there will be actual public hearings to receive comments on September 9 (in Athens) and 10 (in Chattanooga). You can find information about those hearings at OREPA’s website: www.orepa.org.

The new S-EIS announces plans to continue producing tritium in the Watts Bar Reactor, with the Sequoyah reactors near Chattanooga as back-ups. As much as 22,500 curies of radioactive tritium will be leaked to the Tennessee River each year from the process. This is acceptable, says NNSA, because the tritium will be diluted by the volume of water in the Tennessee River.

Because tritium is a radioactive (highly) form of hydrogen, it will bond with oxygen and become tritiated water—our bodies can’t tell the difference, and neither can fish, frogs, turtles, or any other biological life form.

In addition, making bomb tritium at Watts Bar will release about 100 times as much tritium to the air as regular reactor operations (2,980 curies versus 36 curies). The original 1999 estimates for air releases

were off by a mile—DOE said only 340 curies would be released.

So if you live downstream from Watts

Bar (like in Chattanooga, where more than 200,000 people get their water from the Tennessee River) and ask the simple question, “Is there radioactive tritium in my water?” the answer is, “Well, probably, but nothing



we are worrying about.”

Not the only problem

To make tritium in a reactor, special rods are manufactured and placed in the reactor core during regular fuel cycles. The rods are called TPBARs (Tritium Producing Burnable Absorber Rods). The rods contain a special nickel-based core that captures tritium (well, almost all of it), and when the TPBARs are removed from the reactor, they are placed in the spent fuel pools at Watts Bar to cool. Then they are shipped to Savannah River, in South Carolina, to the tritium extraction facility for processing there.

Putting TPBARs in the reactor affects how the other fuel rods in the reactor perform, requiring the replacement of more regular fuel rods. The S-EIS says making bomb tritium in Watts Bar results in 24%

more “spent fuel”—one of the nastiest kinds of nuclear waste there is. Not to worry, says the S-EIS blithely, because TVA has infrastructure in place to handle the extra spent fuel or a plan to manage the extra spent fuel.

What the S-EIS doesn't say is there is no real plan, just a piece of paper. The nation has no spent fuel repository and will not have one in the foreseeable future, if ever. So the hot fuel from Watts Bar operations is stored on site, in spent fuel pools. Recent reports of the capacity of Watts Bar to store spent fuel suggest there is less than 10 years capacity remaining.

A nasty job, but somebody's gotta do it

Actually, no.

No one has to do it. The one good thing about the S-EIS is they have scaled back their original expectations for tritium production. That is because arms control agreements are reducing the size of the US stockpile, allowing tritium from old weapons to be recycled. Not much of a gain, but a little.

The US could avoid contaminating the Tennessee River with bomb tritium and creating even more spent fuel by funding dismantlement programs that would take

apart the thousands of warheads currently being held in one of several categories of “reserve.” The US has around 1,550 strategic warheads actively deployed, but also maintains 3,000 additional warheads in an “active hedge reserve.”

A sensible nuclear policy would move to reduce the cost and risk of maintaining unusable warheads—in the process, tritium could be recycled for active warheads so they could be maintained until they, too, hit the scrap heap.

If that were done, experts estimate, at a rate of 5% of the hedge reserve each year, the US would have no need for new tritium production until after 2029. In other words, the tritium being produced today is likely to decay through at least one

half-life before it would be needed for the stockpile—tritium's expiration date is a “must-use-by” rather than the “best-if-used-by” we are used to seeing on grocery store shelves.

It is also possible to buy tritium commercially from manufacturers who produce it for commercial use (exit signs, airport lighting, etc).

But our tritium supply could also simply be allowed to lapse, and the natural decay of tritium, which has a half-life of 12.3 years, would eventually force the reduction of our nuclear stockpile, warhead by warhead. This kind of disarmament, controlled by nature, would allow the US to say with a straight face we were on the path to abolition, however slowly, as we promised the rest of

the world in the nuclear Nonproliferation Treaty in 1969.

If the US “hedge reserve”—thousands of nuclear weapons not part of the “actively deployed” stockpile—were reduced by 5% each year, there would be no need to produce tritium until 2029. So why are we spending hundreds of millions of dollars, polluting the river unnecessarily, making huge amounts of excess spent nuclear fuel, and poking our finger in the world's eye by violating global nonproliferation norms?

Be heard! Public comment period ends September 22

All of the above can be used as talking points—and you can add your own—in comments to the NNSA. If you live in East Tennessee/north Georgia, downstream from Watts Bar or just within hailing distance of Chattanooga, you should plan to attend a tritium hearing on September 9 (Athens) or 10th (Chattanooga).

Copies of the Draft S-EIS can be found on NNSA's web site: <http://nnsa.energy.gov/nepa/tritiumseis>.

Comments should be sent to the document manager, Curtis Chambellan.

email: tritium.readiness.seis@doeal.gov

mail: CLWR SEIS Document Manager

P O Box 5400

Albuquerque, NM 87185-5400.

Since the Tennessee Valley Authority is a cooperating agency in the S-EIS and is actually doing the dirty work of making bomb tritium in their reactor, you can also send a copy of your comments to TVA Board member Marilyn Brown.

email: board@tva.gov

mail: Marilyn Brown

TVA Board Services

400 W Summit Hill Drive, WT 6

Knoxville, TN 37914.

Ms. Brown is a tenured professor at Georgia Tech, a distinguished visiting scientist at Oak Ridge National Lab, and was cited by the International Panel on Climate Change for her contributions toward the work that received the Nobel Peace Prize in 2007.

A full color fact sheet and additional materials are available at www.orepa.org.

NNSA Silent on UPF Plans

New earthquake hazard maps increase risk for Oak Ridge, underscore need for new Environmental Impact Statement

The Uranium Processing Facility has gone dark.

As in, cut all communications, fly under the radar.

Since late spring, when National Nuclear Security Administration officials stated they expected to pretty much adopt the “Red Team” report whole cloth, a veil of silence has descended on the UPF project.

OREPA has filed a Freedom of Information Act request to learn about the radioactive dump uncovered in February during construction of a haul road for the UPF. We’ve received no information to date.

OREPA and the Alliance for Nuclear Accountability wrote to NNSA Administrator Frank Klotz in July calling for a new Environmental Impact Statement on the new UPF plan since it is clearly not the old plan. No reply.

Then OREPA wrote to the DOE’s office in charge of NNSA’s EIS program calling for a new EIS and citing particular reasons why the old EIS is no longer valid. No answer.

Plan C.

The effort to build a new bomb plant in Oak Ridge to produce thermonuclear secondaries (the core of the H-bomb) at Y12 goes back twenty-five years. But the UPF’s history begins in 2005 and was formally certified in a Record of Decision issued in 2011. Since then, more than a billion dollars has been spent on designs for the bomb plant, most of which, it is now clear, will be shredded.

The first plan, a multi-purpose UPF ran into the space/fit issue when they were 80% finished. NNSA has admitted that was a half billion dollar write-off. Plan B was a phased approach to the UPF—everything except bomb production was kicked down the road at least fifteen years. A year into Plan B, independent cost estimators announced the UPF, at this rate, could easily cost as much as \$19 billion and wouldn’t be ready for twenty years.

That was the end of Plan B, later to be dubbed the “Big Box” UPF. It was clear that Congress would not fund the bomb plant at that level, and, since the current operations are already seismically unsafe and other systems are deteriorating, the project would have to be completed sooner than 2038.

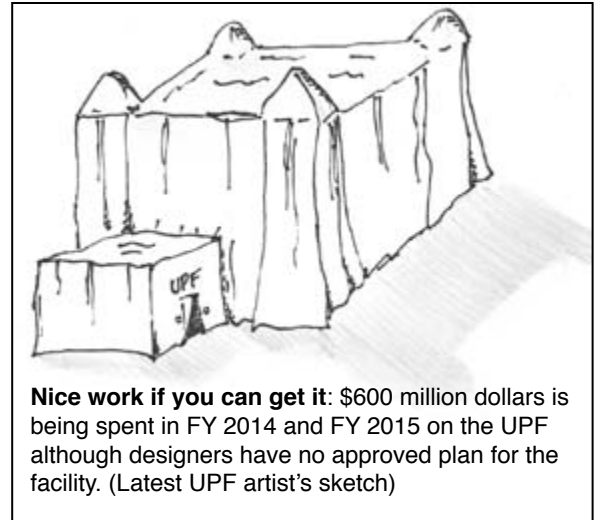
By December of last year, NNSA had begun making alternative plans. A month later, NNSA announced it would appoint a special “Red Team” to come up with Plan C (which they were already writing).

Sure enough, six weeks later the Red Team unveiled Plan C. The UPF would still be built, just smaller—bomb production only. And parts of the operation would be moved to existing facilities (which have some of the same problems of the aging facilities they are using now in Building 9212). Other non-nuclear operations would be located in new facilities that would not have to incorporate expensive earthquake-proofing into their design. Only the small-box UPF would require that.

There was not a lot of suspense left after the Red Team reported that NNSA should do what it was already preparing to do—scale back its plan and try to expedite the UPF. In April the official word was, “We have to look at the plan.” By May it was “We expect to adopt the Red Team plan for the most part.”

Still some mystery

There is still some mystery, and a couple of complications. One mystery is



Nice work if you can get it: \$600 million dollars is being spent in FY 2014 and FY 2015 on the UPF although designers have no approved plan for the facility. (Latest UPF artist’s sketch)

the cost. The Red Team, having been told that \$6.5 billion was the magic number, said it believes its plan can be implemented for \$6.5 billion. The magic of the number comes from its generation—it was pulled from thin air.

The Red Team also said the project could be done by 2025. Since earlier official estimates of the deadline for getting out of Building 9212 were a pretty firm 2018, and since the Defense Nuclear Facilities Safety Board says Building 9212 does not meet current safety standards now, it is not clear how it will keep operating safely for ten years.

Add to that the fact that the same management team that spent a billion dollars on Plan A and Plan B is still in place to manage Plan C—and is in the middle of spending \$600 million with no approved plan at all!—and it’s fair to wonder if the 2025 occupancy date has any meaning at all or is just another number pulled from thin air.

Complicating the picture is the need for a new Environmental Impact Statement. The 2011 EIS does not cover the new plans.

The need for the UPF is significantly diminished from the 2005 vision of a mas-

sive nuclear weapons complex producing 80 nuclear warheads a year—pits at Los Alamos and secondaries at Y12. We no longer need to support a stockpile of 6,000 nuclear weapons; the START Treaty limits the US to 1,550 actively deployed warheads, enough to destroy life on the planet several times over.

A big selling point for the UPF was the reduction of the “security footprint” at Y12—all the nuclear weapons work could be consolidated in the UPF and its sister, the Highly Enriched Uranium Materials Facility. The fence could be drawn in, the guard force reduced. But the Red Team plan spread operations out across the current footprint—so much for saving money on security!

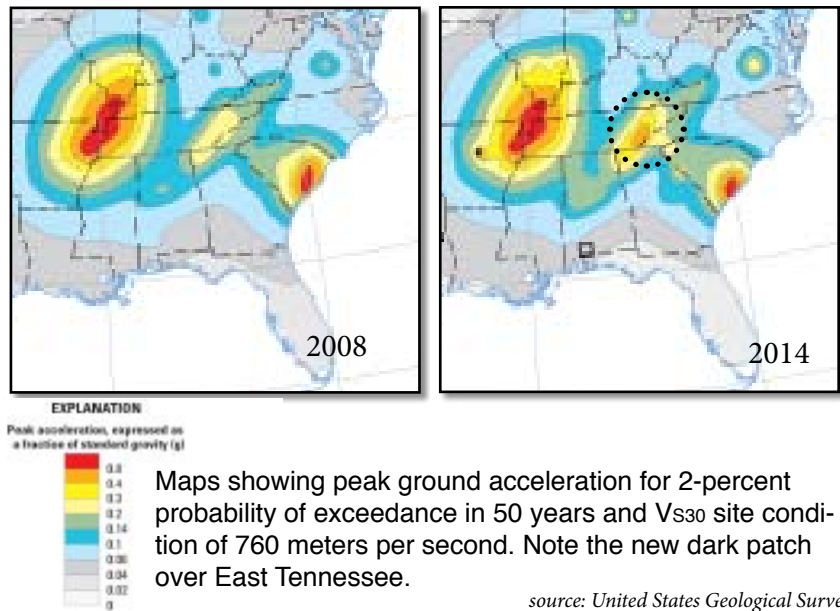
Then there is the radioactive waste dump that was discovered—surprise!—when crews began to build a haul road to transport dirt away from and concrete to the UPF site. It wasn’t all that much of a surprise to those of us who warned, during the last EIS, that it was a quite likely possibility. NNSA dismissed the concerns and plowed ahead, into uranium and who knows what else (We certainly don’t. We asked; they won’t tell us!). Given that this is likely not the last surprise, there are environmental questions not answered in the last EIS.

Earthquakes!

And then there are earthquakes. In early August, the United States Geological Survey released its 2014 update of the Earthquake Hazard maps for the United States. The update incorporates data from hundreds of studies and from observations of major earthquake events like the 2004 tsunami in the Pacific and Fukushima.

In some areas of the US, the hazard went down. Not in East Tennessee. The new hazard map shows the East Tennessee Seismic Zone’s hazard among the most increased in the country; the new hazard is significantly higher than the old one. This has implications for continuing operations at Y12, for the UPF, and even raises a serious question about whether this work should be done at Y12 at all. There are places in the country, after all, where the earthquake hazard doesn’t even show up on the map.

If the US is serious about needing the production operations Y12 provides, it can ill afford to gamble on locating its operations in an earthquake prone valley. Hoping a big one doesn’t happen is hardly the best planning that can be done.



Maps showing peak ground acceleration for 2-percent probability of exceedance in 50 years and Vs30 site condition of 760 meters per second. Note the new dark patch over East Tennessee.

source: United States Geological Survey

Why No UPF?

It’s a fair question. After ten years of planning. Why is there no UPF at Y12?

The simplest answer is also probably the truest: because we don’t need it. Not just we, the nuclear abolitionists—we as a nation.

Turn the idea around. If the United States truly did need a full-scale nuclear weapons production facility, it would pull out all the stops to build the UPF. Funding would flow from Congress (Tennessee’s senior Senator, Lamar Alexander, is the ranking member of the Senate Energy and Water Appropriations Subcommittee, with great influence over funding decisions in the Department of Energy). Major upfront investments three years ago would have accelerated the design process and cut the schedule for UPF construction by half, saving billions of dollars.

If the US truly could not afford a break in production operations at Y12, it would not stand by dithering while the clock ticks down on the old 9212 facility. At the least, contingency plans to use unused space in the HEUMF would have been developed.

So, why no UPF? Not just because of management incompetence (though that has been impressively all-encompassing); not just Congress has failed to exercise oversight and hold contractors accountable; not because no one could find \$3.5 billion in the defense budget to slide over into the NNSA account for the UPF.

It’s because we do not need the UPF.

We’re building it to sate the appetite of corporations and workers who have grown

dependent on federal pork, to satisfy the lab directors who want to keep tinkering with proven weapons designs, introducing new destructive capabilities in the name of “life extension upgrades,” and to mollify Congressional pork-a-ticians who want to bring bacon home to Tennessee.

What’s next?

Eventually, they’ll have to talk to us—to tell the public what they intend to do. NNSA will either announce a new EIS process on their own, as the law requires, or we’ll do our best to force them to do it. When that happens, there will be a public hearing, a document prepared, comments accepted—it will be our chance to call and plead for responsible government that reflects official US nuclear policy: we are committed to a world free of nuclear weapons.

They’ll also have to come up with some real numbers for the cost of retrofitting old buildings and building several new buildings including a UPF, and those numbers will be subject to scrutiny.

Of course, at any time it could all come crashing down, literally, if the tectonic plates underneath the East Tennessee Seismic Zone slide or buckle. The zone has seen Magnitude 6 earthquakes in the past, experts say, though not the recent past. A seismic catastrophe at Oak Ridge could release highly enriched uranium into the air; it would certainly result in the loss of control and material access to large quantities of weapons grade uranium; and there is no cleanup plan for the day/week/month/years after the day of the quake.



▲ Remembering Hiroshima: Erik Johnson reads from the book of names at the August 6 *Names and Remembrance Ceremony* at the gates of the Y12 Nuclear Weapons Complex in Oak Ridge, TN

Remembering Nagasaki: ► Utsumi Shonin guides peace lanterns with a bamboo pole into the Tennessee River on August 9 at the annual ceremony in Knoxville.



◀ Creating peace lanterns: It was a community effort, with markers, paints, scissors and pencils, wooden bases, dowels and drills—and a dozen OREPA members—making scores of peace lanterns for the Peace Lantern Ceremony in August.

BRIEFS

Marshall Islands challenge US in court

OREPA was pleased to sign the petition supporting the groundbreaking lawsuit brought by the Marshall Islands this spring; the suit was filed in federal court in San Francisco, CA as well as in the International Court of Justice in the Hague.

The Marshall Islands, site of 67 US nuclear tests in the 1940s and 50s, is taking the US and other nuclear weapons nations to court to get them to keep the promise they made forty-five years ago to seek nuclear disarmament “at an early date.”

Described by Newsweek as a David-and-Goliath effort, the first-ever-of-its-kind suit brought a predictable response from the United States. Papers filed with the court in California asked for the case to be dismissed for a variety of reasons, none of which addressed the fundamental claim of the island nation—that the nuclear Nonproliferation Treaty lays a legal obligation on the United States to do what it promised, and the US and other nuclear weapons states are in material breach of that contract.

Hearings on the motions filed in the case are scheduled for September 12. More information about the Marshall Islands suit is available at Nuclearzero.org.

A generous bequest

During his career, Ed Mucha was a pilot for Delta Airlines. But he was much more than that. He learned flying in the military, and after his experience there he dedicated his life to creating peace.

Ed came to know OREPA several years ago when he and his wife Trish came to a nonviolence workshop and attended the April Action. They were on the list of people we looked forward to seeing every year at the School of the Americas demonstration in Columbus, Georgia.

Ed and Trish came back to East Tennessee when he received a terminal diagnosis; they joined us for Sunday vigils at the Y12 complex when his health permitted, including his last outing this spring before he died.

This month, OREPA received a generous bequest from Ed’s life insurance policy with Delta—his legacy will live on here, and in the other groups he supported, including Veterans for Peace.

We are deeply grateful to Ed and Trish and are making plans to memorialize him with the bequest.

Ed’s gracious act has inspired us to remind all of our members that each of us can support OREPA’s work against nuclear weapons and for nonviolent social change in our planning as well. Several time over the last ten years, generous gifts have made the difference between operating in the black or falling behind on our bills.

Alliance for Nuclear Accountability

This November, OREPA will be delighted to host the Alliance for Nuclear Accountability’s annual fall meeting. Each fall, ANA members gather near a nuclear weapons site to learn more about the local group’s work and to strategize collaboratively on the work we do together. ANA has been OREPA’s key partner in the effort to raise awareness of and opposition to the UPF.

During the ANA meeting, people will gather from communities in New Mexico, California, Idaho, Washington, Colorado, Ohio, South Carolina, Georgia, Texas, Missouri and more—people who live near weapons sites (or former weapons sites) and have dedicated themselves to holding the government accountable for its actions

We’ll spend one day on a tour of Oak Ridge and three days in meetings, with a little evening time set aside to have fun. And we’ll have a chance for local people to join parts of the meeting to get to know amazing activists from around the country. You can find more information on OREPA’s website (www.orepa.org) as the date gets closer and plans firm up.

