

# CONTAINMENT

A FILM BY PETER GALISON AND ROBB MOSS

## **Contact info**

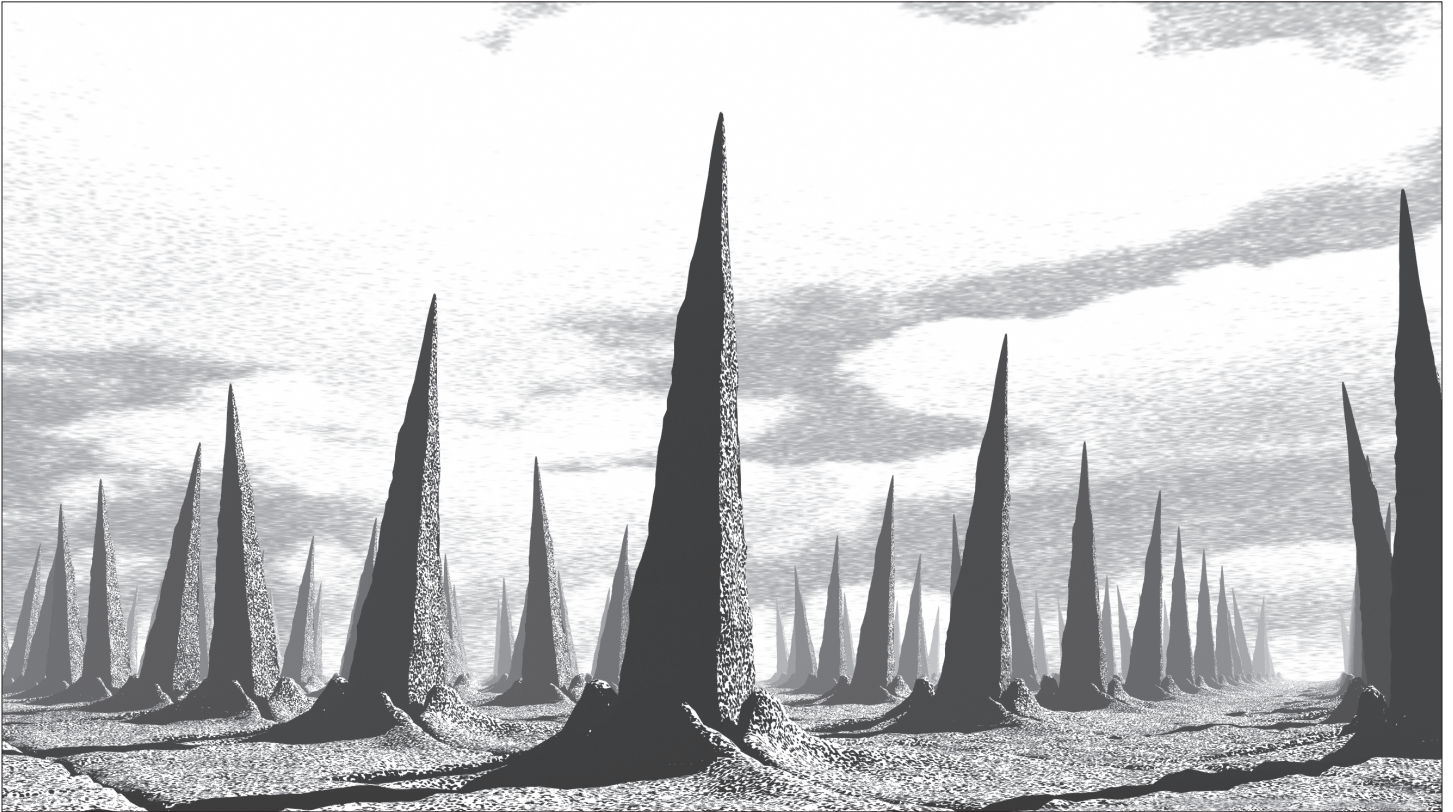
Peter Galison & Robb Moss *Directors/Producers*  
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## **Social media**

*Twitter*    <http://twitter.com/ContainmentDoc>  
*Facebook*    <http://facebook.com/TheContainmentFilm>

## **Running time**

81 minutes



**International sales and distribution**

Cristine Platt Dewey at ro\*co films international  
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## **About the Film—**

### **Short Synopsis**

Can we contain some of the deadliest, most long-lasting substances ever produced? Left over from the Cold War are a hundred million gallons of radioactive sludge, covering vast radioactive lands. Governments around the world, desperate to protect future generations, have begun imagining society 10,000 years from now in order to create monuments that will speak across time. Part observational essay filmed in weapons plants, Fukushima and deep underground—and part graphic novel—Containment weaves between an uneasy present and an imaginative, troubled far future, exploring the idea that over millennia, nothing stays put.

## **About the Film—**

### **Long Synopsis**

Can we contain some of the deadliest and most long-lasting substances ever produced? Left over from the Cold War are a hundred million gallons of highly radioactive sludge, thousands of acres of radioactive land, tens of thousands of unused hot buildings, all above slowly spreading deltas of contaminated ground water. Stocked around 400 reactors (worldwide) are spent fuel assemblies, growing at a rate of 12,000 tons per year—each one radioactive enough (if unprotected) to kill a carload of people driving by it at full tilt. Not a single country in the world has a well worked-out plan about what to do with the waste stream of such deadly and long-lived materials (plutonium has a half-life of 24,000 years). Leave it where it is--in rotting barrels and shallow ditches? Rocket it into the sun with the risk of a failed launch? Dump it into the seas against international treaties? Bury it hoping it does not escape and poison future cities? The government has demanded that waste sites contain warnings to the future--for a period of risk spanning ten thousand years. 'Containment,' using observational as well as graphic novel and 3D animation, winds back and forth between an uneasy present and an imaginative, troubled far future.

### **Observing the Present**

The film engages three critical contemporary radioactive sites where containment has become the central issue—each explores a different aspect of the almost impossible task of isolating radioactive waste from the environment. First, the Waste Isolation Pilot Plant (WIPP) in New Mexico, the world's only operating underground nuclear dump before a radiological leak caused it to close in February 2014. WIPP has been the site of furious protest and enthusiastic welcome—a vast, 250-million year old salt deposit now actively receiving nuclear waste from all over the United States. We have filmed extensively in the site—above ground and 2,000 feet underground. Our second site is the nuclear concentration of facilities in the Savannah River basin. Much of the nuclear waste trucked to the WIPP site originates from the 320-square mile Savannah River nuclear weapons plant (SRS) in South Carolina. In recent years, the SRS has been completely re-designed to deal with the deadly nuclear waste stream created there. Our third loss-of-containment site, Japan's

## About the Film—

Fukushima Prefecture, was certainly never intended to be a repository for nuclear waste. But now, like many scenes of accidents and weapons testing, it has become one. The Fukushima story encompasses both the compromised waste pools and the region itself—now a gigantic waste site.

### **Imagining the Far Future**

The U.S. federal government demanded, as a condition for opening the WIPP site, that plans were filed for a gigantic monument to prevent inadvertent intrusion into the waste. In fifteen years, when the WIPP closes, its buildings will be bulldozed and the monuments constructed. But how could the DOE know anything about the world four hundred generations from now? Back in 1989, the Department of Energy hired futurologists, astronomers, science fiction writers, even experts on the search for extra-terrestrial intelligence, to create “scenarios” in which our descendants heedlessly break into the six million cubic feet of waste. In one, the Feminist Alternative Potash Corporation read the warnings, but disregard them as the misbegotten claims of “male epistemological arrogance.” In other scenarios in the film, religious fanatics come to believe the scrolls of truth lie buried, mining robots break into the waste, or Mexican treasure hunters see the warnings as idle threats protecting wealth—like the inscriptions on Tutankhamen’s tomb. To guide us through these ten-thousand year futures, we have filmed the scenarios’ authors and have interwoven a graphic narrative that explores these weird, funny, and unnerving images of the future. This combination of current reality, ethics, politics and DOE’s commissioned science-fiction futures are the raw materials of our film. We have designed animation built on the proposed monuments—which visualize the actual marker designs that the DOE panels sketched.

Every nuclear weapon made, every watt of electricity produced from a nuclear power plant leaves a trail of nuclear waste that will last for the next four hundred generations—leaving us to struggle with the necessary and impossible task of containing it. Part observational essay, part graphic novel, *Containment* will explore the idea that over millennia, nothing stays put.





## Directors' Statement—

Sometimes we face problems that are optional. We could decide to send people to Mars. But we could also decide not to. Or we could postpone the decision by twenty or fifty, a hundred years, even five hundred years. What we, as filmmakers, found so absorbing about nuclear waste is that the problem is not like Mars: it is absolutely necessary that we deal with seventy years of nuclear neglect from the byproducts of making weapons and power. But necessary does not mean easy or even crystal clear: the task is staggeringly difficult and expensive. The possibility of leaks or fires or explosions, makes ignoring it impossible. Much radioactive waste remains dangerous for tens of thousands, in some cases hundreds of thousands, of years.

We want to control this material, we want to believe that we can engineer the titanium cases, casks, and mines to box it up and keep it away from us. But because the waste does last such a long time, the United States Congress demanded that, when the nuclear agencies bury the waste, they find a way to warn the future for a period not less than ten thousand years: don't dig here. Responding to Congress, one of the nuclear weapons laboratories asked the reasonable question: What might future threats be? What kind of situations might lead the future to intrude into these underground repositories? And how could we avoid it?

This is where we began with the film, challenged as filmmakers to imagine what the planners were imagining: how could we *see* the scenarios they used to sketch out possibilities—like a vast underground train tunnel that might burst through the site, unaware of surface markers. Or a religious cult that came to think that sacred scrolls lay beneath the “danger” indications. Both of us have long been interested in graphic novels and other forms of animation—we had used animation in our 2008 film *Secrecy* (about national security secrecy and democracy). Here, in *Containment*, the staccato, suggestive images of a graphic novel seemed perfectly matched to the sketchy scenarios that the futurists used to offer a glimpse of the far future. With some notion of future—however fragmentary—the nuclear futurists tried to decide how to persuade our descendants from penetrating the site. What kind of monuments should they build? Should they create their structures to convey language? Images? Raw emotion? Or maybe monuments, ultimately, were not enough—maybe they needed to launch myths that would be handed down, generation by generation?



We were deep into making the film when, in March 2011, the terrible triple meltdown at Fukushima Daiichi began to unfold. It was very soon clear to us that this accident, through contamination, had essentially brought radioactive waste into the land and buildings of Fukushima Prefecture and its surround. Filming there was quite remarkable. We were less interested in re-tracing one more time the myriad decisions that affected the accident than we were in how people were coping with the waste. We followed parents and their children, plant cleanup workers, fish testers, fishermen, and many others. It was sadly only possible to bring a handful into the final film, for example, a cattle farmer high in the radioactive hills who refused to kill his cows and flee. We came to know Mr. S, an older landowner, who drove every other day to his now semi-condemned ancestral home in the radioactive hills. Mr. S. made clear to us many things not so apparent in headline-grabbing news stories: without hospitals or grocery stores, living in the affected areas became impossible. In an aside, he told us he had wanted, one day, to die in what had been the family home for 300 years. But now, without doctors or nurses, it was impossible for him to stay there for more than a few hours at a time. Others told us they tried to keep ahead of the mold and rodents, but a home abandoned for a few years is hard to revive.

A daunting challenge for us, working with our great editor, Chyld King, was to weave the various sites together: Carlsbad and the far future, the Savannah River weapons plant, and Fukushima. In one sense, that relation is clear: the Japanese were working all-out to re-contain the waste that had escaped. This was a scenario of loss of enclosure, come to life. But other connections emerged as well. Monuments, some hundreds of years old, dot the spine of Japan, warning their futures not to build below the markers that indicated the high-water mark of an earlier tsunami. Like the American scenarists, the Japanese too experimented with handed-down stories as a way around stone markers. They even made illustrated, graphic novel-like sequences to convey that warning. Of course, the Japanese have a deep and long engagement with illustration, anime, and graphic novels—in the film, we use an almost 75-year old Japanese paper theater image sequence, drawn to warn the future. It forms a striking counterpoint to our own animated scenarios.



After so many years working on the film, we ended up admiring and empathizing with the broader communities, experts, and engineers who are struggling with this outsized problem. Even the most basic time and space scales of our ordinary lives are sent flying by the radioisotopes. When we talk about consent, what exactly do we mean—the town? The district? The state? The region? Carlsbad, New Mexico, where much waste is being buried, is closer to Texas – or Mexico for that matter— than it is to the northern part of the state. So whose consent? Harder still: If we decide to bury waste for the long term, even if we (the town, state, region) agree, are we trampling on the right to decide of the next 400 generations? Or are we protecting them from the uncertain and unpredictable ages between us and them?

These questions of time and space haunted us throughout the making of the film, all the way through. Here is stuff, materials, that force us into the most uncomfortable situations, press us to think about times so far into the future it makes us dizzy. Ten thousand years ago, Stonehenge was four millennia— science fiction time, in the future.

*Peter Galison and Robb Moss*

## About the Directors— Peter Galison and Robb Moss

**Containment** is the second film directed by Peter Galison and Robb Moss. The two also directed *Secrecy* (2008), which premiered at the Sundance Film Festival and showed at Tribeca, South by Southwest and over two dozen other film festivals around the world. Examining the relationship between government secrecy, national security and democracy, *Secrecy* was reviewed in more than 20 newspapers, including *The New York Times* and *Los Angeles Times*, and was screened by both the Congressional Record and the ACLU.



**Peter Galison** is a Pellegrino University Professor of the History of Science and of Physics at Harvard University. Galison's previous film on the moral-political debates over the H-bomb, *Ultimate Weapon: The H-bomb Dilemma* (with Pamela Hogan, 2002) has been shown frequently on the History Channel and is widely used in academic courses. In 1997, he was awarded a John D. and Catherine T. MacArthur Foundation Fellowship; won a 1998 Pfizer Award for *Image and Logic* as the best book that year in the History of Science; and in 1999 received the Max Planck and Humboldt Stiftung Prize. His books include *How Experiments End* (1987), *Einstein's Clocks, Poincaré's Maps* (2003), and *Objectivity* (with L. Daston, 2007) and he has worked extensively with de-classified material in his studies of physics in the Cold War. Galison's work also features artistic collaborations, including partnering with South African artist William Kentridge on a multi-screen installation, "The Refusal of Time."



**Robb Moss** is a filmmaker, professor and chair of the Department of Visual and Environmental Studies at Harvard University. Moss's *The Same River Twice* (2003) premiered at the Sundance Film Festival, was nominated for a 2004 Independent Spirit Award and opened theatrically at Film Forum in New York City. Winning prizes in Nashville, Chicago, New England, and Alabama, *TSRT* was selected by the Chicago Reader as Best Documentary (and Best Cinematography) of 2003. His autobiographical and essay films, such as *The Tourist* and *Riverdogs*, have screened at the Museum of Modern Art, the Telluride Film Festival and IDFA. He has served as a festival juror at Sundance, San Francisco, Denver, Full Frame, Camden, Seattle, Chicago, New England, and Ann Arbor, is on the Board of Directors for ITVS, and works as a creative advisor at the Sundance Documentary labs.

## About the Editor & Co-Producer— Chyld King



**Chyld King** is editor and co-producer of *Containment* and is based in Boston, MA. He previously also edited and co-produced Moss and Galison's film *Secrecy* (2008), which premiered at the Sundance Film Festival. King worked for several years with filmmaker Errol Morris, and was one of the editors of Morris' Academy Award winning film *The Fog of War*. He has cut documentary projects for film and television, including episodes of *God in America* for PBS, American Experience's film *The Amish*, and other projects that have aired on networks such as PBS, IFC, and Bravo.



## **Credits—**

**Producer/Directors** Peter Galison & Robb Moss

**Editor/Co-Producer** Chyld King

**Cinematographers** Hervé Cohen, Tim Cragg,  
Austin DeBesche, Leonard Retel Helmrich, Stephen McCarthy

**Animators** Peter Kuper, David Lobser

**Composers** Mike Einziger, Danny Bensi & Saunder Jurriaans, Tristeza

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