

Every month since February 1987 the Olympia Fellowship of Reconciliation has produced one-hour TV programs on issues related to peace, social justice, economics, the environment, and nonviolence. The Olympia FOR's program airs several times every week for the entire month on Thurston Community Television (TCTV), channel 22 for Thurston County's cable TV subscribers. You can see TCTV's schedule at www.tctv.net.

You can also watch the program described below (and many more than 100 of our previous interview programs and special programs) at the Olympia FOR's website, www.olympiafor.org. Simply click the TV programs link, scroll down, and click the program you want to watch. Many of our website's TV program listings also include links to documents describing the program in Word and/or .pdf format.

NOVEMBER 2015

“Fukushima, Hanford, and the Dangers of Living Near Nuclear Radiation”

The Olympia Fellowship of Reconciliation's November 2015 TV program examines the problems of nuclear power, including the disaster that occurred in Fukushima, Japan, and the ongoing problems at Hanford in Washington State, where the same model of reactor is operating.

We'll also gain insights into how people in Fukushima are dealing with their problems and how people everywhere can deal realistically with the dangers of nuclear radiation.

Two guests with long experience and extensive knowledge of nuclear power explore this topic:

- **Carolyn Treadway** has a lifelong connection with Japan, she visited Fukushima twice recently and talked with many people about the realities and how they are coping. Her parts of the TV interview include a number of compelling photographs
- **Tom Buchanan** was working for Greenpeace on a radioactive waste campaign when Chernobyl blew up in 1986. Now he works hard on issues related to Eastern Washington's Hanford Nuclear Reservation.

Fukushima:

On March 11, 2011, a 9.0 earthquake in the ocean knocked out the electric grid power to the six units of the Fukushima Daiichi nuclear plant operated by Tokyo Electric Power Company. Then a tidal wave (tsunami) caused by the earthquake inundated the nuclear power plants and destroyed the emergency backup power systems. Within a few days three reactor cores overheated, exploded, and melted down. Radiation traveled from Chernobyl around the world in 5 days. The US's West Coast get Fukushima's radiation.

People refer to this sequence of earthquake, tsunami, and nuclear meltdown as “triple disasters.”

In the U.S. there are 23 nuclear reactors of the same design still operating: General Electric Mark I Boiling Water Reactors. One of them is at Hanford in Washington State, which we discuss later in the program.

When Carolyn spent substantive time near Fukushima in 2013 and 2014 she took many photos and gathered much information from people there. Her explanations and photographs provided compelling information about the problems and also about people's responses to the “triple disasters.”

The government evacuated people within a 12.4-mile radius around the Fukushima nuclear plant, but the wind can blow in different directions, and radioactive dangers will exist there and beyond for generations, contaminating people, lands, farms, homes, and other buildings. Official attempts to decontaminate the area fall far short of realistic remedies. Irradiated dirt is simply put into thousands of plastic bags that are grouped together on-site. Some areas are too radioactive to even attempt cleanup, and some homes and communities were required to be abandoned.

Some people responded in practical and healthy ways, but some people were emotionally stuck. Some of these have needed support groups and trauma therapy to help them tell their stories. But people can be quite resilient, and Carolyn shared some of their stories. One man owned a significant factory that processed fish products. It was utterly destroyed, but a great many volunteers came forth and helped him rebuild, so now it is operating again. One woman met a real need by starting a nursery school.

Based on what Carolyn experienced in Fukushima, she identified what she calls “Wisdom From Fukushima – Lessons for Life” and read them during our interview:

1. Live the life that is important to live
2. Never take life for granted
3. Honor those who have lost much
4. Keep on shoveling the mud
5. Help others as best you can
6. Create ways to have hope
7. Find life again through nature
8. Build community
9. Protect and guide the children
10. Care for one another: this keeps you going and provides meaning for rebuilding your life

Hanford:

People tend to think that something occurring in another part of the world is remote – until we discover a local connection. The same kind of nuclear power plants that melted down in Fukushima – **General Electric Boiling Water Reactor model Mark I** – also exists at Hanford, near the Tri-Cities of Richland, Pasco and Kennewick, on the Columbia River in the eastern part of Washington State, a few dozen miles north of Oregon. Our local Mark I was upgraded to Mark II but still grossly unsafe.

The atomic bomb that the U.S. dropped on Nagasaki in 1945 used nuclear materials produced at Hanford, and the U.S. has used Hanford for making nuclear weapons for these past 70 years. The commercial nuclear power plant at Hanford is called the Columbia Generating Station, CGS. It used to be part of the Washington Public Power Supply System – WPPSS – as WPPSS plant #2. CGS has produced much more nuclear waste since 1984 than all of the military nuclear production at Hanford over a period twice as long.

In the U.S. 23 General Electric Boiling Water Reactors of this design still operating, including one at Hanford, one in Diablo Canyon, California, on the Pacific Ocean coast on at least a dozen earthquake faults, and several others at dangerous seismic locations. These tend to be old reactors that emit a lot of radiation.

Technical experts within the nuclear industry warned about the dangers of this design back in the 1970s, but more were built. Also, in February 1976 three senior-level GE engineers resigned and testified to Congress that nuclear power was “so dangerous that it now threatens the very existence of life on this planet.” They especially criticized their own company’s General Electric Mark I as especially dangerous.

The Columbia Generating Station (CGS) is the last reactor at Hanford to still be operating. But huge amounts of waste are stored at Hanford, leaking into the ground, leaking into the ground water, and leaking into the Columbia River.

When the nuclear plant at Chernobyl (in Ukraine) melted down in 1986, and when the Fukushima plants melted down in 2011, they released radioactive contamination into the environment and contaminated the people, including people as far downwind from Hanford as North Dakota. The contamination included Cesium 137, which is highly radioactive and is absorbed into our bodies. Children near Fukushima have been developing thyroid cancers at much, much higher rates now than before.

CGS does not have an adequate safety evacuation plan, nor an effective way to deal with a fire in the area where spent – but still highly dangerous – fuel is stored on the highest level of reactor building.

Workers in nuclear power plants suffer contamination. To reduce the amount of radiation exposure to each individual worker, the owner of CTS hires transient workers to do some of the work, so many more people are exposed.

Nuclear meltdowns are not just theoretical risks, but that they do happen often. They happened at Three Mile Island (Pennsylvania), Chernobyl (Ukraine), and now Fukushima. Even if a nuclear power plant has a decent safety record, all you need is one bad day.

An earthquake is what triggered Fukushima's other two disasters, the tsunami and the nuclear meltdowns. Actually, many nuclear power plants are located near earthquake faults. Tom showed us a map of many fault lines at Hanford. Although the CGS was designed for 6.9 earthquake but an earthquake much bigger than that occurred in 1872. The epicenter was much closer to Hanford than had originally been thought. A 1936 quake in Milton-Freewater Oregon (closer yet) was about 5.7 to 6.1. A geologist's 2013 report to the Oregon and Washington Physicians for Social Responsibility said that after the seismic risk assessment for CGS was completed in 1981, many further studies were conducted, and these "piled up the geologic evidence that indicates the original Columbia Generating Station's seismic risk assessment significantly underestimated the potential risks to the reactor and associated structures." But despite a large mass of evidence over the past 30 years, there have been no seismic structural upgrades at Hanford's CGS.

Nuclear waste is a horrible problem at Hanford and nationwide. The nuclear waste from the very first nuclear reaction in the US still has no permanent or safe storage – after more than 70 years! The U.S. does **not** have a workable plan for storing nuclear wastes, and does **not** have the likelihood of developing one anywhere on the horizon. Yet we continue to generate nuclear waste without a plan for storing it or protecting us from it.

When the government and the nuclear industry were starting to promote nuclear power in the 1950s, they told us that it would be "too cheap to meter." Instead it turned out to be horribly expensive.

The Columbia Generating Station (CGS) is not a familiar name. It used to be called Reactor #2 or WNP-2 when WPPSS (the Washington Public Power Supply System) ran it. WPPSS is a consortium of publicly owned utility. When WPPSS defaulted on its loans, this was the biggest default of any public entity in U.S. history.

The public interest is supposed to be protected by the Nuclear Regulatory Commission – the NRC – but, like so many other "regulatory" agencies, the NRC has been captured by the industry that it purports to regulate, so it functions more like an arm of the nuclear industry itself, instead of the public's watchdog over it.

The NRC allows nuclear material to be burned longer before it is replaced. This actually increases corrosion within the nuclear plant, and it also increases the risks of radiation exposure to workers.

Carolyn pointed out that nuclear power is not necessary. This gigantic expense and danger exist simply to boil water – as if the nuclear reactor as a big teapot – to produce steam to turn turbines. We can meet our energy needs in simpler, cheaper, and safer ways. **She recommended two books:**

- *The Great Transition: Shifting From Fossil Fuels to Solar and Wind Energy* by Lester Brown. See www.earth-policy.org
- *Carbon-Free and Nuclear Free: A Roadmap for US Energy Policy* by Arjun Makijani. See <http://ieer.org/resourcereports/carbon-free-and-nuclear-free>

A number of excellent organizations work on the issues we have been discussing, including:

- Physicians for Social Responsibility (PSR) and Washington PSR, www.wpsr.org Do a web search for WPSR + "Columbia Generating Station"
- Beyond Nuclear -- www.BeyondNuclear.org (301) 270-2209
- Nuclear Information and Resource Service -- www.NIRS.org
- Nuclear Energy Information Service -- www.NEIS.org

- Union of Concerned Scientists – www.ucsusa.org – Click “Our Work.” Then click “Nuclear Power” www.ucsusa.org/nuclear-power#.VhbsnPIViko
- Nuclear Free Northwest – www.nuclearfreenorthwest.org
- Carolyn also recommends the Resilient Japan blog on www.newstories.org
- Also, you can see more of Carolyn’s photos and hear more of her experiences and insights on her YouTube Presentation, “Wisdom from Fukushima.” Visit www.YouTube.com, and search for “Wisdom from Fukushima.” You can see her presentation and also the Q&A as a separate video.
- Carolyn is willing to speak to other audiences about Fukushima and nuclear issues. You can contact her at (360) 438 5424 carolyn@planetcare.us

An unfortunate reality is that we cannot put the genie back into the bottle. Nuclear power exists, nuclear waste exists, and we must deal with these realities. Carolyn is especially enthusiastic about the counseling clinics and support group for trauma survivors mentioned earlier. She suggests ways to help people become more resilient and effective in coping with nuclear realities, and she urges each of us to become aware, stay informed, make choices, and take action to address these issues.

Remember, this whole nuclear power thing is just an extremely complex, extremely expensive and extremely dangerous way to boil water, so the steam can turn turbines to generate electricity. Certainly we can meet our energy needs in more safe and sensible ways instead of nuclear power.

Also remember that people are resilient, so we can confront serious issues such as this – and we can cope with serious accidents – and figure out ways to move ahead. Let’s practice resilience and creativity to meet our needs before disaster strikes here.