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Groups Petition for Advanced Test Reactor Safety Review

In April, Keep Yellowstone Nuclear Free (KYNF) and Environmental Defense Institute (EDI) filed a formal Petition with the Defense Nuclear Facilities Safety Board – a congressionally mandated agency – to perform a complete safety review of the Advanced Test Reactor (“ATR”) operating at the Idaho National Laboratory (INL).

Attorney Mark Sullivan – who filed the Petition on behalf of KYNF and EDI states: “I write to again request, as I did in 2006, that the Defense Nuclear Facilities Safety Board exercise its jurisdiction to perform a complete safety review of the ATR, a nearly 45-year old nuclear test reactor operating at INL. The ATR poses a threat to public health and safety, has had well-documented safety problems and inadequate safety systems, and should receive rigorous independent safety oversight by the DNFSB.

“On behalf of KYNF, On January 17, 2006, I wrote to Chairman Eggenberger asking the DNFSB to perform a safety assessment and review of the ATR. At the time, the DOE was contemplating a proposal to consolidate nuclear operations related to the production of plutonium-238 (“PU-238”) and radioisotope power systems using PU-238 at INL, using the ATR to produce the deadly isotope. When KYNF/EDI began investigating the proposal, it quickly grew concerned about the safety of the ATR.

“Chairman Eggenberger responded to that request with a letter dated March 28, 2006. Chairman Eggenberger concluded as follows: ‘At this time, ATR is not operated for national security purposes; consequently, ATR is not a defense nuclear facility subject to the Board’s oversight.’

“KYNF/EDI respectfully disagrees with that conclusion. I had one follow-up conversation with DNFSB General Counsel Richard Azzaro. Mr. Azzaro explained that the key to the Board’s determination was the proviso that “at this time” the ATR is not operated for national security purposes. There is no requirement in the statute that the ATR, or any other facility, be operated for national security purposes at the time of the DNFSB’s review. The ATR has been used for national security purposes, and that is enough to give DNFSB jurisdiction to review its safety.

“Nonetheless, even under Chairman Eggenberger’s narrow reading of the DNFSB’s jurisdiction, the DNFSB has jurisdiction because, as set forth below, the ATR *is* currently operated for national security purposes.

“In connection with a Freedom of Information Act lawsuit that KYNF and EDI recently concluded with the DOE, the DOE has acknowledged that the ATR is today operated for national security purposes.... Thus, the DOE

has now acknowledged that the ATR is currently used for national security-related nuclear defense programs. Therefore, the DNFSB has jurisdiction to review the safety of the facility and should exercise that authority to ensure public safety.

“Apart from the Hugo Declaration, the DOE has, in its own press releases and on its website, touted the ATR’s national-security related missions. For example, the ATR has been, is, and may continue to be, involved in research related to nuclear non-proliferation. These efforts include the Reduced Enrichment for Research and Test Reactors Program, as well as PU-238 research and production (which the DOE has acknowledged will be used for undisclosed “national security” purposes). Thus, the ATR is today “operated for national security purposes” and thus subject to DNFSB jurisdiction and oversight.

“The ATR as a whole, and many of its critical safety systems in particular, had a design life of just 20 years.¹ However, the reactor has now been operating for more than 45 years. The aging and suspect systems include the primary and secondary cooling systems, the emergency firewater supply system, and a variety of questionable supporting emergency management systems such as backup power supplies and backup water pumps.

“In 2006, the DOE embarked upon, and now perhaps has completed, a “Life Extension Program” for the ATR, a multi-million dollar program aimed at extending the life of the ATR by another 20 years or more. Ignoring its obligations under the National Environmental Policy Act, the DOE performed absolutely no review of the environmental impacts and alternatives to that project. KYNF and EDI, along with Dave McCoy, sued the DOE in the Idaho Federal District Court to try to force the DOE to prepare an Environmental Impact Statement and open the matter up to public comment. However, the Idaho Court rejected the plaintiffs’ claims, concluding that the ATR had

¹ Various DOE historical documents confirm this 20 year design life. For example, the “ATR Reactor Vessel Internals Lifetime Scoping Analysis” confirmed that “the original design life of various equipment at the time (including the reactor vessel) was twenty years of full-power operation.” Another study, titled the “Aging Evaluation of the ATR Vessel Support Assembly,” states: “Initial design of the reactor and supporting equipment was generally based on an expected 20 year lifetime.” The ATR specifications for Primary Heat Exchangers states that they had a “nominal 20 years” design life. The ATR specifications for the Reactor Vessel stated that it had a “nominal 20 years” design life. And, the ATR Specifications for the Outlet Flow Pipe Assemblies refer to a design life of “A twenty year period.” Petitioners will be happy to provide copies of these specifications if the DNFSB desires.

an “indefinite” life span. Therefore, no NEPA review was required, and the Life Extension Program was not subject to any public scrutiny or input.

“With the Life Extension Program presumably now completed, DNFSB oversight could not be more timely. The DOE has spent tens of millions of dollars on the Life Extension Program, and independent, third-party oversight could help determine if investment has cured the many problems at the ATR, and whether continued operation of the ATR is prudent,” Sullivan stated.

In DNFSB petition follow up (6/3/10), Sullivan states: “I now write because KYNF and EDI have received, from anonymous sources, disturbing reports of continued serious problems at the ATR, underscoring the urgent need for a full, independent review of the safety of that facility. I ask that you consider this new information in connection with our request, and give this matter your fullest attention.

“KYNF/EDI has also been provided a copy of two documents that shed further light on the safety-related problems at the ATR. They are: (1) a May 17, 2010 cover letter from P.C. Hildebrandt, Chairman of the DOE’s Nuclear Safety Oversight Committee (“NSOC”) to John J. Grossenbacher, the INL Laboratory Director and (2) a copy of the minutes from the NSOC meeting held March 23-25, 2010. Mr. Hildebrandt’s letter highlights the NSOC’s most significant concerns about the reactor, which are addressed in greater detail in the NSOC minutes.

“As you will see, these documents underscore some of the very concerns that KYNF and EDI have been raising for the past four years. Those concerns include: (1) the ATR’s age and wear, which in the parlance of the Hildebrandt letter have resulted in “latent plant conditions including material condition deficiencies and equipment functional failures”; (2) problems with “conduct of operations, maintenance and work planning” at the ATR; and (3) understaffing. In sum, the ATR is old and deteriorating, it is underfunded and understaffed, and poses a serious threat to public health and safety.”²

Just between 2008 and the present, the ATR was forced to shut-down at least 11 times due to system failures.³ No regulated commercial nuclear power reactor would be allowed to operate with the ATR’s “safety” record. DOE’s ATR operations are self-regulated, so there is no independent oversight authority and/or authority to order DOE to permanently shut-down the ATR – including the Idaho Department of Environmental Quality⁴ – is willing

² DOE’s Advanced Test Reactor Programs Nuclear Safety Oversight Committee meeting 3/23-25/10 report is available on EDI’s website. <http://environmental-defense-institute.org>

³ INL Operations Reports Related to the ATR 2008 to May 2010; available on EDI’s website.

⁴ IDEQ 6/1/10 email to EDI stating “DOE is self regulating on the reactor operations. For the first hand reports you need to contact the Department of Energy.”

to take a stand to protect the public from this emanate hazard.

Moreover, there is no DOE, operating contractor, or U.S. Government accountability if there is a major ATR accident. DOE contracts with operating contractor (Battelle) indemnify them from liability claims “that involve the risk to the public.”⁵ Congress further indemnifies the federal government and DOE from liability claims.⁶ Literally, downwinders are not protected from our own government for grossly reckless operations that put the public at risk to catastrophic accidents.⁷

*For a copy to the above DFNSB Petition, go to
<http://environmental-defense-institute.org/publications>*

Idaho Cancer Rates Continue to Rise at Record Levels

The Cancer Data Registry of Idaho (CDRI) annual report “Cancer in Idaho – 2007” published December 2009 states; “Cancer incidence increased at a rate of about 1.2% per year in Idaho from 1975 to 1989, and at a rate of about 1.8% per year from 1995 to 2000. Between 1989 and 1995 the trend was predominately influenced by prostate cancer incidence among males. Since 2000 the overall incidence trend has been stable. Cancer incidence trends over time were different for males and females. For males, much of the overall trend is due to the trend in prostate cancer incidence. For females, much of the overall trend is due to the trend in breast cancer incidence.”

CDRI cancer (male/female) incidence data by Health District (HD) ranks the top three as; HD-4 (Counties Ada, Boise, Elmore, Valley) the highest, followed by HD-3 (Counties Adams, Canyon, Gem, Owyhee, Payette, Washington), and HD-1 (Counties Benewah, Bonner, Boundary, Kootenai, Shoshone), and HD-7 (Counties Bonneville, Clark, Custer, Fremont, Jefferson, Lemhi, Madison, Teton).⁸

Below is a partial listing of CDRI’s report that also states significant cancer percentage rate increases **per year** in specific organs;

⁵ U.S. Code, Title 42 Chapter 23 ss 2210 (C)(d)(1)(A).

⁶ U.S. Code, Title 42 Chapter 23 ss 2210 (B)(I).

⁷ Examples of this “sovereign immunity” can be found with the litigation brought against the DOE over the Nevada Test Site nuclear bomb testing fallout.

⁸ Annual Report of the Idaho Cancer Data Registry of Idaho (CDRI) – Cancer in Idaho 2007, published December 2009. CDRI is a collective of the Idaho Hospital Association and the Idaho Department of Health and Welfare; see their website; www.idcancer.org

- * Brain and other Central Nervous System,
Non-malignant - 6.5%;
- * Female Breast 1975 to 2001 – 1.5 %;
2001 to 2007 – 4.5 %;
- * Female In-situ Breast 1975 to 1990 – 14.6 %;
1990 to 2007 – 2.2 %;
- * Colorectal 1975 to 1980 – 4.8%;
- * Esophagus 1975 to 2007 - 3.6%;
- * Kidney & Renal Pelvis 1975 to 2007 - 2.7 %;
- * Male Liver Bile Duct 1975 to 2007 - 4.9 %;
- * Female Liver and Bile Duct 1975 to 2007 - 2.9 %;
- * Lung 1975 to 1981 – 6.1 %; 1981 to 2007 – 0.5 %;
- * Melanoma 1975 to 2007 - 3.5%;
- * Non-Hodgkin Lymphoma 1975 to 1997 - 3.1%;
- * Ovary 2003 to 2007 – 7.3 % ;
- * Prostrate 1975 to 1988 – 2.1 %; 1988 to 1991 – 19.1 %;
- * Thyroid 1975 to 2007 - 9.2%. ⁹

CDRI's 2008 report states; "Incomplete case reporting by US Veterans Affairs (VA) hospitals since late 2004 may have resulted in 40,000 to 70,000 cases being missed nationwide **each year.**" This report also states, 2008 Idaho Cancer Incidence all primary sites (organs); In situ – 706; Malignant – 6,692; based on total ID population of 1,523,816. ¹⁰

These CDRI cancer rates correspond to the Nevada nuclear bomb tests and the Idaho National Laboratory re-processing of spent nuclear fuel and the eventual ending (in the mid-1990s) of testing and partial end to re-processing.

Elevated Cancer in Lewiston, ID Clarkston, WA Valley

Eric Barker reports in the Idaho *Lewiston Morning Tribune* "The area that includes Lewiston [Idaho] and Clarkston [Washington] zip codes has a cancer rate 12 percent higher than the State of Idaho average. The cancer (types) that drive that are colorectal, lung and prostate cancer, said Chris Johnson of the Idaho Cancer Data Registry. Higher than normal rates of colon and rectal cancers were observed in the valley between 1997 and 2003."ⁱ

Admittedly and understandably, the Idaho Department of Health and Welfare study focused on the Lewiston Potlatch Forest Industries (PFI) emissions of chloroform and benzene used in the paper production process. As Barker reports; "The higher levels of lung cancer in the valley are probably explained by smoking rates here, according to [Idaho Cancer Data Registry] Chris Johnson."

⁹ CDRI, pages 83 to 96. All rates are per 100,000 and age-adjusted to the 2000 US STD Population cancer cases reported between 1975 and 2007 unless otherwise stated.

¹⁰ Preliminary Report of the Idaho Cancer Data Registry of Idaho (CDRI) – Cancer in Idaho 2008 Preliminary; December 2009, page 3 and 6. See their website; www.idcancer.org

There can be no doubt that PFI contributes to air pollution in the Lewiston/Clarkston valley as anyone with a nose could attest during a Lewiston air inversion , **but is it the only air pollution to which the Clearwater Valley was subjected ?**

EDI conducted a review of the Cancer Data Registry of Idaho reports for Health District No. 2 that includes the cities of Lewiston/Clearwater, and the Idaho counties of Latah, Lewis, Idaho, and Nez Perce. These counties show elevated cancer levels of all types and specific elevated levels of: endometrial, esophagus, kidney/renal pelvis, larynx, lung and bronchus, melanoma of skin, pancreas, prostate, stomach, and testis. ⁱⁱ Most these cancers can also be caused by exposure to radiation.

Allen Benson, PhD, technical scientific consultant on the Hanford Downwinder suit and author of the landmark book *Hanford Radioactive Fallout*, ⁱⁱⁱ agrees that the radioactive particle emissions from Hanford must be included with the iodine-131 emissions to accurately estimate the impact on the downwind populations. Dr. Benson also authored *Radiation Exposure Examples, One on Plutonium Particles in Lewiston, ID, and One on Radiation Particles Downwind of the Hanford Reservation* offers the following comments:

"If the article I wrote on Plutonium Particle Fallout in the Lewiston area from Hanford official quarterly evidence and my estimate for creditable lung cancer doses (reviewed by Dr. John Gofman), and the article I wrote on particle wind movement and estimated doses on humans in the Hanford downwind area by Hanford scientists from Hanford official reports are released from attorney Tom Fould's law firm engaged in Hanford litigation, it will substantially expand the radiation areas and human harm caused by Hanford releases. It will also allow for residual human and environmental radiation measurements to help achieve Scientific Method quality, e.g., Radium lady studies," ^{iv}

Dr. Benson's extensive analysis of the Hanford historical emission records, gained during the original Downwinder litigation discovery and "insider" disclosures, show massive radioactive particulate releases. Of significant concern were the small fission product particles that are carried by the prevailing wind to great distances. Benson's analysis of prevailing wind patterns from Hanford showed cold afternoon winds flowing up the Snake River canyon. Anyone who has rafted the lower Snake River knows, the afternoon winds are so strong that without a motor, the wind would blow you upstream. Health studies of communities in the Snake River canyons must be analyzed.

Dr. Benson additionally considers the CDC Hanford Health Study to be compromised science and grossly underestimates Hanford emissions and the deposition on Idaho, including the Boise area.

**Hanford Environmental Dose Reconstruction
Estimates of Radiation Released Into the Air by
Hanford, 1944-1972^v**

Radionuclide	Avg/ High Amount Released * (Curies)	Half-Life
Iodine-131	740,000 / 980,000	8 days
Tritium (H-3)	200,000	12 years
Cobalt-60	1	5 years
Krypton-85	19,000,000	11 years
Strontium-89	700	50 days
Strontium-90	64 / 180	29 days
Zirconium-95	1,200	64 days
Ruthenium-103	1,200 / 4,100	39 days
Ruthenium-106	390 / 1,400	370 days
Iodine-129	46	16 mill. yr
Tellurium-132	4,000	78 hours
Xenon-133	420,000	5 days
Cesium-137	42	30 years
Cerium-144	3,800 / 11,000	284 days
Plutonium-239	1.8 / 31.0	24,000 yr
Total High Amt.	20,622,699	

* The above average amount released / high amount released is the "uncertainty range" expressed in the HEDR data.

It must be noted that the time lapse between radiation exposure and the onset of cancer or some other radiogenic disease can take decades to surface. Regardless of the "half-life" of the radioactive exposure, once exposed the biological damage is done.

For comparison purposes, the Three Mile Island nuclear power plant accident in 1979 released an estimated 15 to 24 curies of iodine-131. The Hanford region (including northern Idaho) also received fallout from nuclear bomb testing in Nevada during the same period, however, the Centers for Disease Control, for political reasons, refuses to combine the doses.^{vi} The public's concern is that crucial information currently bound up in the Hanford Downwinder litigation process in federal court records (see article below) will remain sealed under a settlement.

**Hanford Downwinder Lawsuit
Update**

After over 20 years according to lawyers 2/10 defending Hanford Downwinders update; "At the January 20, 2010 status conference, the Court established two tracks to begin resolution of claims in the law suit: a trial track and a mediation track. The goal of the trial track is to test the radiation dose models used by the plaintiffs, and will hopefully lead to more agreement between the parties about the worth of claims at various exposure levels. The goal of the mediation track is to settle a category of claims.

The trial track will include the auto-immune hypothyroidism and hypothyroidism (unspecified) claims. Thirty (30) plaintiffs will be randomly selected by the parties to participate in the trial. The Court proposed this trial be held in October, 2010, but the parties have proposed a schedule which sets the trial sometime in 2011.

There will be two mediation tracks, both of which will include thyroid cancer claims. Track A will be the approximately 32 thyroid cancer claims , Judge Dickran Tevrizian will be the mediator for this track.

Track B will be 40 randomly selected plaintiffs from the remaining thyroid cancer claims represented by the other law firms in the consolidated cases. Judge Ed Leavy will be the mediator for this track. By March 1, 2010, the parties will have settled on a schedule for both mediation tracks. The next status conference is set for March 17, 2010 at 8:30 a.m. at the U.S. District Court in Spokane.

Court of Appeals Issues Important Rulings

On August 14, 2007, the United States Court of Appeals for the Ninth Circuit issued an opinion on the appeals of the bellwether decisions in 2005. Generally, the Court of Appeals affirmed the trial judge's instructions to the jury regarding the law of the case. This means that the court made important decisions agreeing with the Downwinder Plaintiffs that the government contractor defense did not apply and that principles of strict liability did apply.

The Court of Appeals also agreed with the trial court that the "but for" standard of causation would be applied. This was a setback because it sets a higher standard than the "substantial factor" test that the Downwinder Plaintiffs had proposed. If it stands, it will limit the number of Downwinder Plaintiffs who may recover in the case.

The court considered questions specific to the individual cases that were on appeal. The Court of Appeals reversed the decisions in three cases that were decided against Downwinder Plaintiffs on the grounds that the jury was improperly instructed about specific issues raised in those cases. These cases must now be retried.

The Court of Appeals affirmed the trial court decision

against Shannon Rhodes, rejecting her challenges to certain evidentiary rulings and claims of juror misconduct. In its amended opinion, the Ninth Circuit panel reconsidered its decision that plaintiffs who had filed individual suits while the class action suit was pending did not have the benefit of the tolling of the statute of limitations while the class action claim was pending. The court elected to follow a decision from the United States Court of Appeals for the Second Circuit and concluded that tolling principles did apply to individuals who filed individual suits while the class action suit was pending. Thus, the court's earlier comments on this question no longer apply and tolling principles will be available. In its amended opinion, the court denied all the parties' motions for rehearing and advised that the Ninth Circuit had denied the request for *en banc* review by a larger panel of judges."

Editors Note; For more information go to Downwinders.com This ongoing Hanford Downwinder litigation – since 2002 - has cost the federal government an estimated \$100 million – our taxpayer money - to defend the Department of Energy and its contractors. The US government continues to fight this losing battle because it cannot afford a precedent being set that would open up dozens of other lawsuits at other DOE operations around the country. Also see EDI's June 2005 newsletter.

Hanford Downwinders Get Their Day in Court

Warren Cornwell reports in the *Seattle Times*, "As a 5-year old, Steve Stanton never gave a thought to a place called the Hanford Engineering Works. Steve Stanton, outside his Walla Walla boyhood home, is among six plaintiffs in the first lawsuit to go to trial by people who say they were sickened by radiation exposure from the Hanford nuclear-weapons program decades ago. Stanton was found to have thyroid cancer in 1996. As a 5-year-old, Steve Stanton never gave a thought to a place called the Hanford Engineer Works. The towheaded boy was too busy roaming his Walla Walla neighborhood, building forts with his younger brother and picking raspberries from his grandfather's garden.

But on a day in early December 1949, scientists more than 60 miles away at Hanford embarked on a secret experiment that would touch the lives of Stanton and thousands of others in eastern Washington and Oregon.

At a massive concrete factory in the desert north of Richland, built to extract plutonium for the core of nuclear bombs, the scientists began pouring caustic chemicals onto a ton of radioactive uranium fresh from a nuclear reactor.

As the scientists expected, the reaction spewed radiation through a 200-foot smokestack and into the Eastern Washington sky. The winds carried it as much as 200 miles away. Beginning today, the legacy of that experiment at the World War II-era nuclear-weapons factory and countless other radiation leaks from Hanford will go on trial in a Spokane courtroom.

Stanton is one of six plaintiffs, the first of roughly 2,300 Hanford "downwinders" suing the companies that built and ran Hanford. They suffer from cancer and other illnesses, some fatal, that they or their families say stem from radiation showered on them without their knowledge.

The companies insist there is no evidence — despite years of studies — that Hanford radiation sickened, injured or killed its neighbors. While the trial starting today will center on scientific disputes over whether the radiation sickened people, it also represents a trial of an ambitious program by the federal government and big corporations that propelled the U.S. into the nuclear age and left a trail of pollution and secrecy.

"We're really dealing with closing a chapter on one of the darker stages of our history," said Robert Alvarez, a senior policy adviser to the Clinton administration's secretary of energy and a longtime critic of the nuclear-weapons industry. "There were a lot of people being put at risk without their knowledge or their consent," he said.

Stanton was born at Walla Walla General Hospital on Nov. 6, 1944, two months before the first uranium was dissolved at Hanford to extract tiny amounts of plutonium for the core of a nuclear bomb. The first big puff of radiation into the sky followed almost immediately.

At that point, almost nobody knew what was happening in the desolate, windswept desert near a bend in the Columbia River. Not most of the roughly 50,000 people who worked there, nor the people who lived nearby in farm towns like Pasco and Kennewick. They didn't know that in those vast gray buildings, scientists were feverishly working to collect plutonium.

War work

It was the height of World War II, and the radioactive metal was a key ingredient for the Manhattan Project, the top-secret government effort to build an atomic bomb. Plutonium from Hanford sat at the center of the world's first nuclear bomb, exploded in a test in New Mexico. Hanford also produced the plutonium in the bomb dropped on the Japanese city of Nagasaki. It wasn't until August 1945, after the atomic bomb exploded over Hiroshima, that the true purpose of the Hanford factories was unveiled. "It's Atomic Bombs" read the headline of the local Richland Villager newspaper.

From the time it became widely known, government and industry officials from DuPont, and then General Electric issued statements that the factories posed no health

threat. In August 1945, a memo sought to debunk rumors, declaring the site safe for workers and nearby residents.

"We do not live in a 'City of Pluto,' as certain elements of the press describe our village. Pluto is safely confined behind walls or barriers in the Plant. What little of him as does escape is not going to relegate anyone to purgatory," it stated.

The statement was among the first of a steady stream of assurances spanning decades. But within Hanford, radiation concerns surfaced before construction finished. As early as December 1943, an internal memo warned that winter weather could trap radioactive gases close to the ground, particularly radioactive iodine, I-131, as they come out of the factories' stacks. "Unless some method of handling the active iodine other than its passage from the stack as a vapor is developed, it appears that this will present a grave health problem," the memo stated. The warning proved prescient.

Up in the air

The processing factories initially had no filters, so whatever went into the factory's exhaust system wound up in the air.

In spring 1945, I-131 levels near the stacks rose to 100 times the "permanently tolerable value," according to a DuPont record. By December of that year, I-131 was found on vegetation in Richland, Pasco and Kennewick as much as 32 times the safety level set soon after, in January 1946.

By 1951, an estimated 730,000 curies of I-131 had been released into the atmosphere. For comparison, the 1986 accident at the Chernobyl nuclear-power plant in the former Soviet Union released an estimated 50 million curies of I-131 over 10 days.

Hanford scientists worried that radioactive iodine from the factories could damage people's thyroids, which help regulate metabolism. Hanford officials eventually dealt with the problem by installing filters and waiting longer to dissolve the uranium. The iodine, with a half life of eight days, became less of a problem as the uranium cooled.

The exception was the December 1949 experiment, known as the "Green Run." It was done in conjunction with the Air Force, for what appears to be a test of radiation-monitoring equipment. After the test, radiation above the safety threshold established at the time was found in a region extending from The Dalles in Oregon to Spokane, and from Yakima to the Blue Mountains, according to a memo kept secret until 1986. Other radiation problems continued to reach beyond Hanford's borders. Particles and flakes of radioactive material continued to float periodically out of the factories to nearby towns. Columbia River water was used to cool the nuclear reactors, and then flushed back into the river still bearing some radiation. By 1971, when the last of those reactors closed, more than 100 million curies of radiation are thought to have flowed into

the Columbia River. Elevated radiation showed up as far away as in oysters in the Pacific Ocean near the river's mouth.

Growing up

Steve Stanton knew nothing of this. He was a healthy boy, according to him and his mother. He ate vegetables pulled from the garden. His mother remembers him drinking milk delivered from nearby Young's Dairy. Milk is considered a prime conduit for I-131, when it falls on vegetation eaten by cows. In 1952 his family moved to Seattle, where his father worked at a dry-cleaning business near the foot of Queen Anne Hill.

Stanton was a quiet kid with a penchant for numbers. He graduated from the University of Washington in civil engineering. He returned to Walla Walla in 1973, bought a house a few miles from where he grew up and settled into a career with the county engineering department. He raised three girls and quietly moved toward middle age. What he knew about Hanford came from the newspaper.

Then, in the spring of 1996, he felt like he was coming down with a cold or a flu. That's when the doctor found the lump below his Adam's apple. A few weeks later, his thyroid was cut out and declared cancerous. "Cancer," Stanton recalled. "That's kind of a nasty word."

Surfing the Internet to learn about treatments for thyroid cancer, Stanton came across Web sites for "downwinders" — people who lived near nuclear-weapons factories or testing grounds and believed they were sickened by radiation. Convinced that his thyroid cancer came from Hanford, he joined the downwinder lawsuit. By then, the lawsuit was well on its way.

In 1986, the Department of Energy and Hanford, under public pressure, released thousands of pages of documents that spelled out how much radiation had come from the factories. The revelations set off a huge controversy. In 1991, the first downwinder lawsuit was filed. Since then, the lawsuits, seeking various amounts of money for damages, have been killed by one federal judge's ruling, only to be revived by the 9th U.S. Circuit Court of Appeals. They are now before a second judge, William Nielsen.

The federal government has spent tens of millions of dollars to defend the companies, because it promised to indemnify them when they took the contract to run Hanford. It will also have to pay if the plaintiffs win the case. The trial starting today represent six "bellwether" plaintiffs — people who will act as test cases. The outcome could influence the fate of the other cases. The massive legal case comes down to this deceptively simple question: Did Hanford make people sick?

The defendant companies, General Electric and DuPont, argue there is no solid evidence it did. Despite the private concerns of early Hanford officials, no study has turned up

unusual patterns of disease in nearby residents that can be traced to Hanford radiation. "The bottom line is the plaintiffs do not have any epidemiology to establish that I-131 caused any of these conditions," said Kevin Van Wart, the lead defense attorney. "You have to have some science to say there is reason to believe that more likely than not Hanford caused this thyroid disease."

The Hanford Thyroid Disease Study, the major study of downwinders by Seattle's Fred Hutchinson Cancer Research Center and the federal Centers for Disease Control and Prevention, concluded in 2002 that there was no evidence of higher thyroid disease or thyroid-cancer rates among people exposed to higher doses of radiation. It cautioned, however, it couldn't rule out that a particular person got a disease from the radiation.

Plaintiffs' attorneys, meanwhile, have attacked the Hanford thyroid study as flawed, and say defendants haven't offered another scenario for the diseases.

"They have not identified anything that would be an alternative cause at all, let alone anything that's more likely to be a cause [than Hanford radiation]," said attorney David Breskin. Scientists working for the plaintiffs argue the thyroid study overstates the certainty of its conclusions. It fails to acknowledge possible statistical errors that could throw off the results, and doesn't account for all of the radiation that downwinders might have encountered, they claim.

They also question the study's independence from influence by the defendants. A recent court filing notes that several people involved in creating the computer models that estimated Hanford radiation exposures also worked for the U.S. Department of Justice or the firm defending companies in the downwinder lawsuit.

Hanford historian Michele Gerber, author of "On the Home Front: The Cold War Legacy of the Hanford Nuclear Site," said she hopes the trial can provide some answers to the question of whether Hanford harmed any downwinders. "I don't think you can move forward until you have a democratically arrived at answer," said Gerber, who works

for Fluor Hanford, the main company running the facility. But it may never close the chasm separating people over Hanford's history. Judith Jurji's father moved the family to Pasco in 1949 to work as a Hanford pipe fitter. She was 4. She left in 1964 to go to college.

Tired and forgetful

For years, she wrestled with chronic fatigue and forgetfulness. After the 1986 revelations about Hanford, she had her thyroid checked and learned it wasn't functioning properly. She became a leader in the downwinder movement. Both she and her sister are plaintiffs in the case, though they aren't one of the six bellwether cases.

She still goes back to visit her relatives who live near Hanford. "I don't like to, but I do," Jurji said. "I think my sister and I feel the same way. We just felt like there were so many lies. We were really deceived about the safety of the place."

In Richland, the overriding feeling is one of pride in the role Hanford played in arming the country. The local high-school team is called the Bombers, its insignia a mushroom cloud. The Atomic Ale Brewpub and Eatery serves Plutonium Porter and Half-Life Hefeweizen. The local history museum features several rooms dedicated to Hanford.

But there's no mention of the Green Run, or the downwinders, or the radiation that reached towns surrounding Hanford. Roger Rohrbacher feels no anxiety about Hanford's history. He was a 23-year-old scientist when he arrived in Richland in 1944 to work on a mysterious project. He expressed pride at the role it played in winning the war. Now 85 and a docent at the museum, he shows no doubts about what happened at the plant. "As far as the safety and the radiation, I don't remember any problems," he said.

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End Notes

ⁱ Barker, Eric, "Study: Cancer not linked to air pollution, Agencies look at possible causes for elevated cancer rates, *Lewiston Morning Tribune*, May 7, 2005

ⁱⁱ Cancer Data Register of Idaho Annual Report, Cancer in Idaho, 2002 published April 2004, Idaho Hospital Association, Cancer Data Register of Idaho, page 72. The Cancer Registry considers "Statistically Significant" when compared to Idaho state averages, ($p > 0.05$). It must be noted that when these cancer rates are compared to U.S. cancer rates, they are even more significantly elevated. Prior to 1950, Idaho ranked to lowest in cancer rates; however the start of nuclear materials processing and testing of nuclear bombs radically changed this status.

ⁱⁱⁱ Benson, Allen. B, Ph. D, Hanford Radioactive Fallout, Hanford's Radioactive Iodine-131 Releases (1944-1956), High Impact Press, 1989.

^{iv} Letter to Chuck Broscious, Environmental Defense Institute, May 30, 2005, from Allen B. Benson, PhD Chemistry.

^v Hanford Health Information Network, Spring 1997, page 4 and 10, Sponsored by the States of Washington, Oregon, and Idaho.

^{vi} For a more complete discussion on the increased cancer rates in Idaho, see EDI Newsletter July 2004, August 2003, and July 1999, available on our website publications section.