

JULY 5, 2017



## REPORT TO THE PRESIDENT

UNITED NATIONS CONFERENCE TO NEGOTIATE A LEGALLY-BINDING  
INSTRUMENT TO PROHIBIT NUCLEAR WEAPONS, LEADING TOWARDS  
THEIR TOTAL ELIMINATION

EVIDENCE OF THE HUMANITARIAN CONSEQUENCES OF  
NUCLEAR WEAPONS / FISSION: "FAMILY, COMMUNITY,  
ENVIRONMENT AND JUSTICE IMPACTS" 20 JUNE, 2017

# REPORT TO THE PRESIDENT

## **Fission: Family, Community, Environment and Justice Impacts**

### **Speakers:**

**Mary Olson, Nuclear Information and Resource Service ([www.nirs.org](http://www.nirs.org))**

**Karina Lester, Yankunytjatjara-Anangu, daughter of Yami Lester who was blinded by nuclear testing in South Australia**

**Roland Oldham, Chair of Moruroa e Tatou, the nuclear veterans association, French Polynesia**

**Linda Modica, Erwin Citizen's Awareness Network, Erwin, TN**

Slides were presented by Mary Olson and Karina Lester, included, in full, as part of this document. Written records of the comments of Linda Modica and Roland Oldham are also included.

The speakers wish to thank the organizational sponsors:

Federation of American Scientists  
Institute for Energy and Environmental Research  
Natural Resources Defense Council  
Nuclear Information & Resource Service  
Physicians for Social Responsibility New York  
Western North Carolina Physicians for Social Responsibility

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The presentations follow in order of the session.

Respectfully submitted,

**Mary Olson, Nuclear Information and Resource Service, [maryo@nirs.org](mailto:maryo@nirs.org)**

# Nuclear: War of Human Consequences

Mary Olson, Nuclear Information and Resource Service

[www.nirs.org](http://www.nirs.org)

Reprise of a talk given at the Vienna Conference on the Humanitarian Consequences of Nuclear Weapons

Thank you  
for being here and for listening.

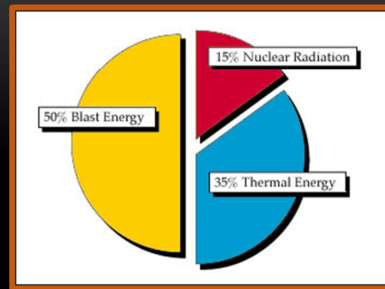
**Nuclear, is war of human consequences.**

We speak today to offer evidence that making, testing and using nuclear weapons are within the jurisdiction of Humanitarian Law.

I will give a summary of the medical consequences of using these weapons, and so I will be talking about August 1945 in Hiroshima and Nagasaki Japan .

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## The energy profile of a nuclear explosion:



A nuclear explosion is composed of three types of energy:  
Blast, Heat, and Radiation.

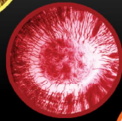
All of these have both immediate and long-term medical consequences.

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### Icons used in this paper:



Blast / Shock



Fireball / Thermal



Immediate Gamma / Neutron Radiation

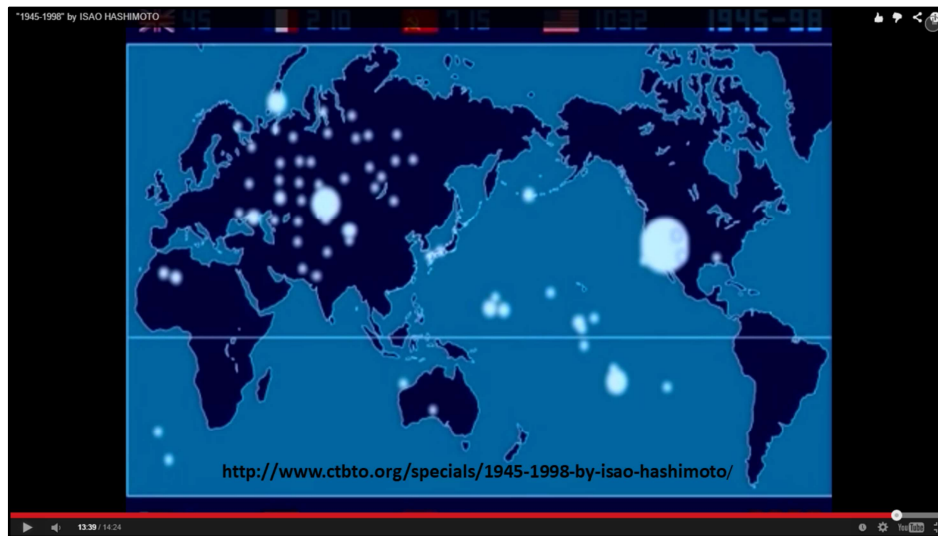


Fall-Out / Persistent Radioactivity

I am using four ICONS to track how each type of energy impacts human health:

- Yellow is Blast.
- Red is Thermal.
- Orange is Immediate Gamma / Neutron Radiation.
- Purple is longer lasting radioactivity.

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More than 2000 nuclear explosions have already occurred.

Each has harmed human communities  
and our environment.

Our planet is already contaminated, even without waging a full-scale nuclear  
war.

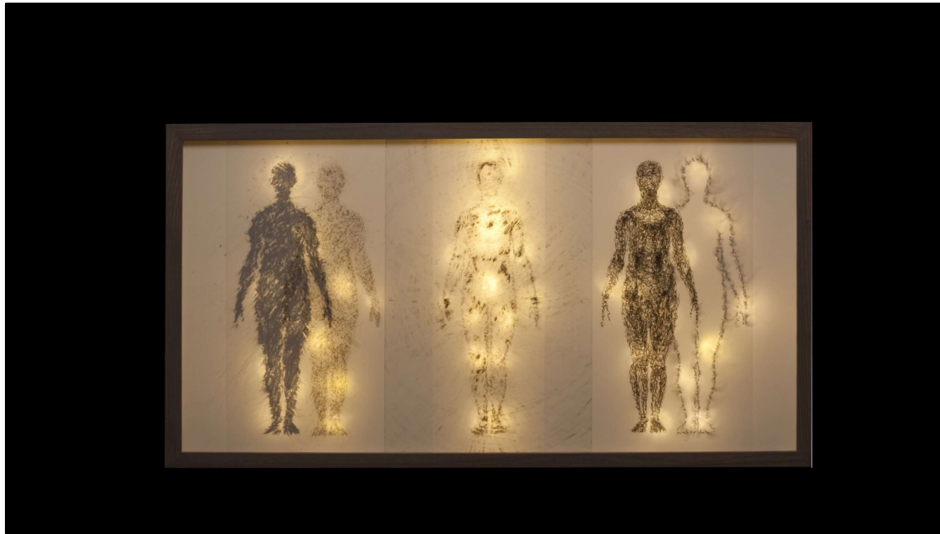
Nuclear weapons have been used in war.

In August 1945 the United States dropped Atomic bombs on Hiroshima and  
Nagasaki, Japan.

More than 150,000 people were killed then, and over time as many as  
250,000.

I need to acknowledge the personal side of this:

\*\*\*



My government chose to use the first nuclear weapons on cities full of people.

Five years later, the US initiated a long-term study of the atomic bomb survivors.

Researchers assumed that humanitarian aid might “skew the results” of their study and so medical treatment was not offered to the victims.

The data from that study is used widely, including by me, here, today. Speaking only as one woman, I need to say I am sorry. I regret this history.

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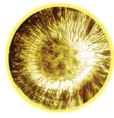
Nagasaki, 1945

Nagasaki. 1945.

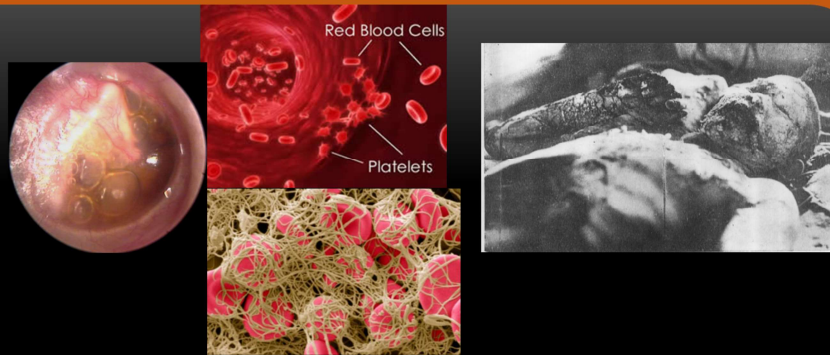
The church is in both frames...

Today this size of bomb would be considered small.

\*\*\*



## • Blast: Immediate Medical Consequences



First is the shockwave.  
Pressure waves form in living tissue;  
Membranes rupture.

Internal bleeding and embolisms cause immediate death.

\*\*\*



A Hibakusha from Nagasaki who witnessed this destruction, made this painting from memory.

\*\*\*



## Thermal: Immediate medical consequences

At Ground Zero temperatures are as hot as the surface of the sun (7000° F / 3800° C)

Resulting winds of 160 -- 500 mph / 250 -- 800 kph leveling people, homes and vegetation;

Immediate updraft of mushroom cloud carries particulate to atmosphere.

Temperatures are as hot as the surface of the sun resulting in:

- Immolation
- Asphyxiation
- Burns

The heat creates winds up to 800 kph, leveling everything.

\*\*\*







Immediate Air Radiation levels:  
Lethal if not shielded

**Hiroshima:**

Gamma rays: 10,300 rads / 103 Gy;

Estimated neutrons: 14,100 rads / 141 Gy

**Nagasaki:**

Gamma rays: 25,100 rads / 251 Gy

Estimated neutrons: 3,900 rads / 39 Gy

**Lethal level ~ 4.5 Gy**

A dose of ionizing radiation of 4.5 Grays is considered lethal.

These levels far exceed that.

If not shielded, flesh is literally cooked.

\*\*\*



## Acute High-Dose Ionizing Radiation: Immediate Medical Consequences

In the human body systemic failure is in three forms:

1. (> 30 Gy whole body) **Cerebrovascular syndrome**
2. (6 to 30 Gy whole body) **Gastro-Intestinal syndrome**
3. (1 to 6 Gy whole body) **Hematopoietic syndrome**

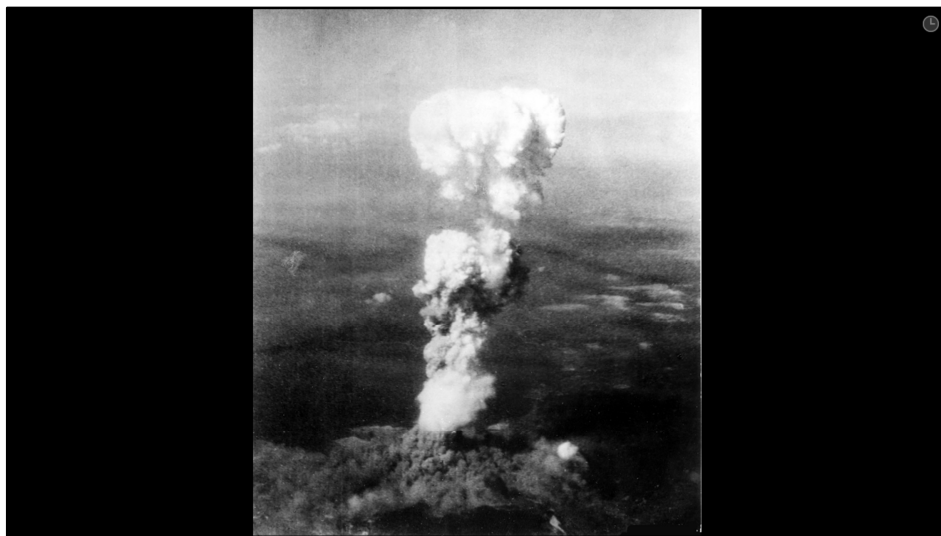
The systemic failure of the human body comes in three forms:

The **Cerebrovascular syndrome**:

The **Gastro-Intestinal syndrome**:

And then **Hematopoietic syndrome**:

\*\*\*



This photo was taken from the plane that dropped the bomb on Hiroshima.

It is a mistake to say that this photo is of the bomb.

This cloud is what was, moments before:

buildings,

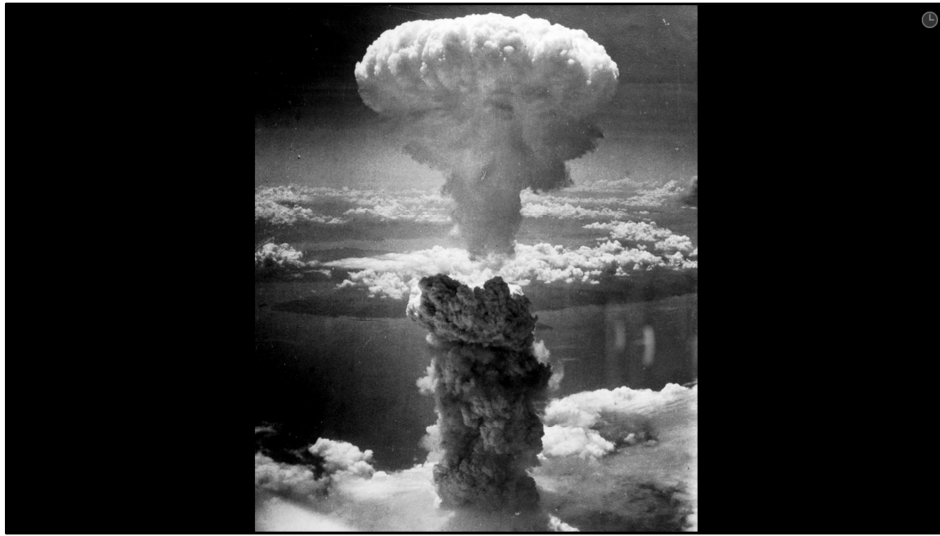
trees,

girls,

boys,

women and men.

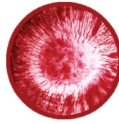
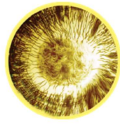
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And this was the City of Nagasaki.

Nuclear weapons are inherently indiscriminate.

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## Immediate Fatalities

City	Estimated Population at the time of the bombing	Estimated number of acute deaths (with 2 – 4 months)
Hiroshima	340,000 – 350,000	90,000 – 166,000
Nagasaki	250,000 – 270,000	60,000 – 80,000

Source: Radiation Effects Research Foundation

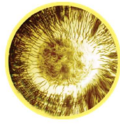
There was horrific loss of men, women and children in 1945 from these two nuclear weapons; and over time, many more.

\*\*\*



There was little help for those who managed to survive in shelters and other shielded places.

\*\*\*



Community Infrastructure Gone

At Hiroshima, 270 of 300 Doctors perished  
and also 1654 of 1780 nurses

Source: ICRC Resource Center

Families and homes gone.

Infrastructure gone.

Most of the medical community perished in the initial blast.

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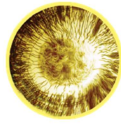
Today's weapons are much larger and create masses of particles. The updraft from the fireball sucks these particles high into the atmosphere.

Multiple explosions form a shroud reducing sunlight.

Without direct sunlight, green plants cannot grow well.

Agricultural crops and natural ecosystems fail leading to famine.

\*\*\*



## Climate and Public Health Impacts

International Physicians for the  
Prevention of Nuclear War

SIDE SESSION:  
Nuclear Winter and Nuclear  
Famine

TUESDAY 27 JUNE 13:15—14:30  
Conference Room B

Multiple nuclear explosions  
can destroy societies/ecosystems



2 billion dead  
from starvation  
alone?

International Physicians for the Prevention of Nuclear War



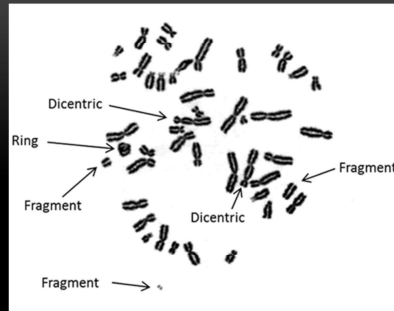
One week from today, 27<sup>th</sup> of June,

The International Physicians for the Prevention of Nuclear War will share their findings on nuclear famine.

I hope you will join them.



## Radiation Induced Chromosomal Aberrations, as seen with microscope



Radiation is invisible but we can see the damage it has done to these chromosomes.

\*\*\*



## Ionizing Radiation: Non-Cancer Medical Impacts



Radiation impacts our cells.

When the reproductive cells are harmed, deformations are one outcome.

This happens to all babies: plants, animals, humans.

We also suffer:

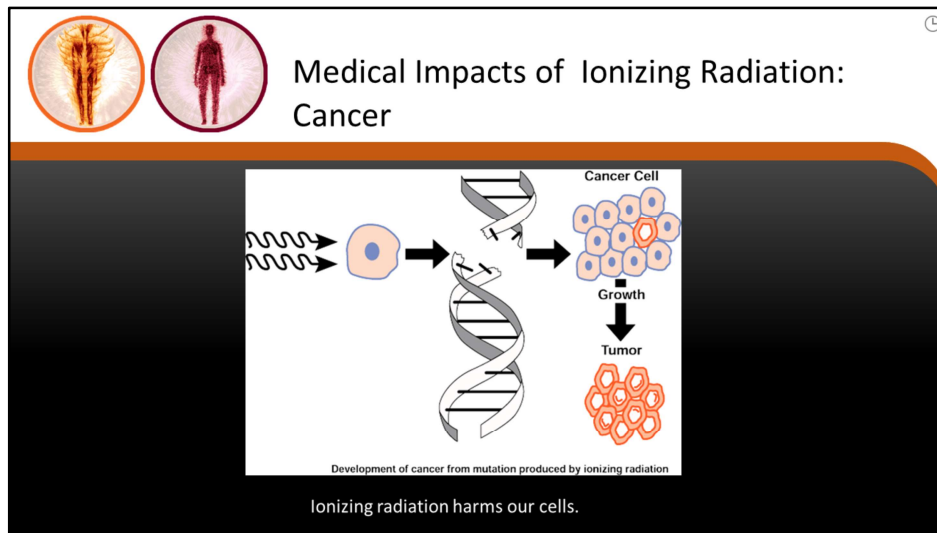
Loss of fertility;

Spontaneous abortion and miscarriage;

Possible heritable mutations;

Avoidance of reproduction due to uncertainty.

\*\*\*



Cancer is the most studied long-term consequence of non-lethal radiation exposure.

WHEN genetic material inside a living cell is damaged, sometimes our bodies can repair that damage. Otherwise the abnormal cell may sit quietly in the body for years or even decades before it makes us sick.

There is no way to predict which exposure will result in cancer.

In general, more radiation equals more cancer risk. However, even an exposure too small to measure could, sometimes, result in cancer death.

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Radiation is more harmful to children

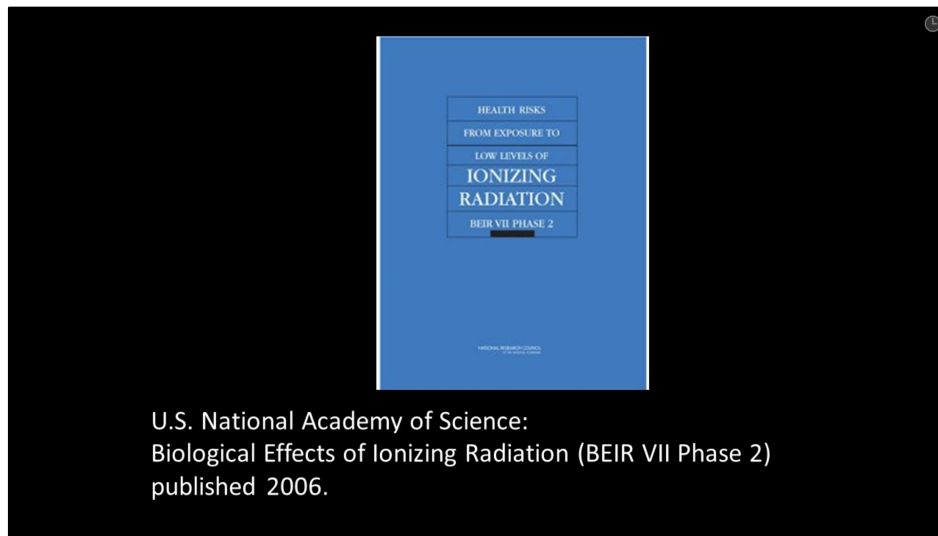


**Children Between Birth and 5 Years**

Children's bodies are small; so the same amount of radiation delivers a larger dose.

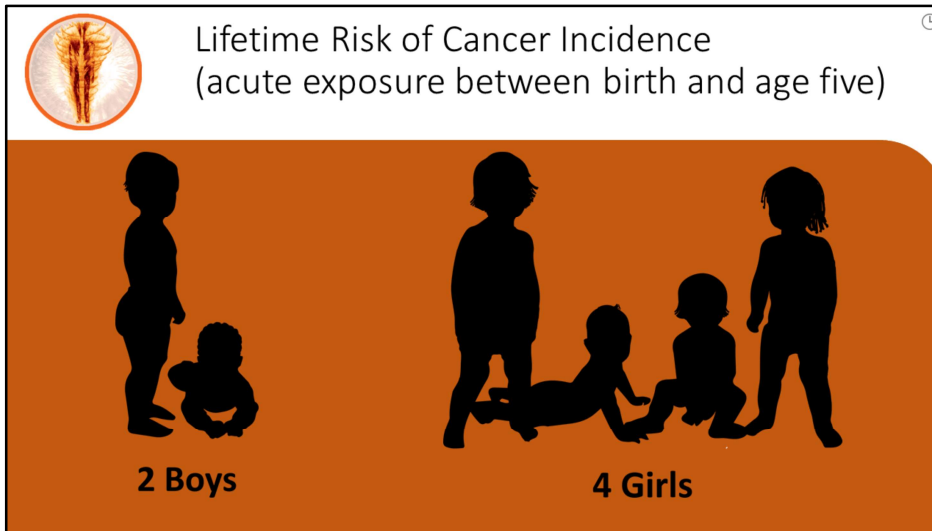
Since children are growing, the cells in their bodies are dividing more rapidly. The DNA in cells is more likely to be damaged when in cell division.

\*\*\*



This 2006 report, the Biological Effects of Ionizing Radiation, #7, also called BEIR VII is the source of the data for the findings I am about to present. The data in the report is primarily from the survivors of the Hiroshima and Nagasaki.

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The survivors of Hiroshima and Nagasaki were grouped by the age they were at the time of the bombing. These groups were tracked over their lifetimes. Cancers and cancer deaths were counted.

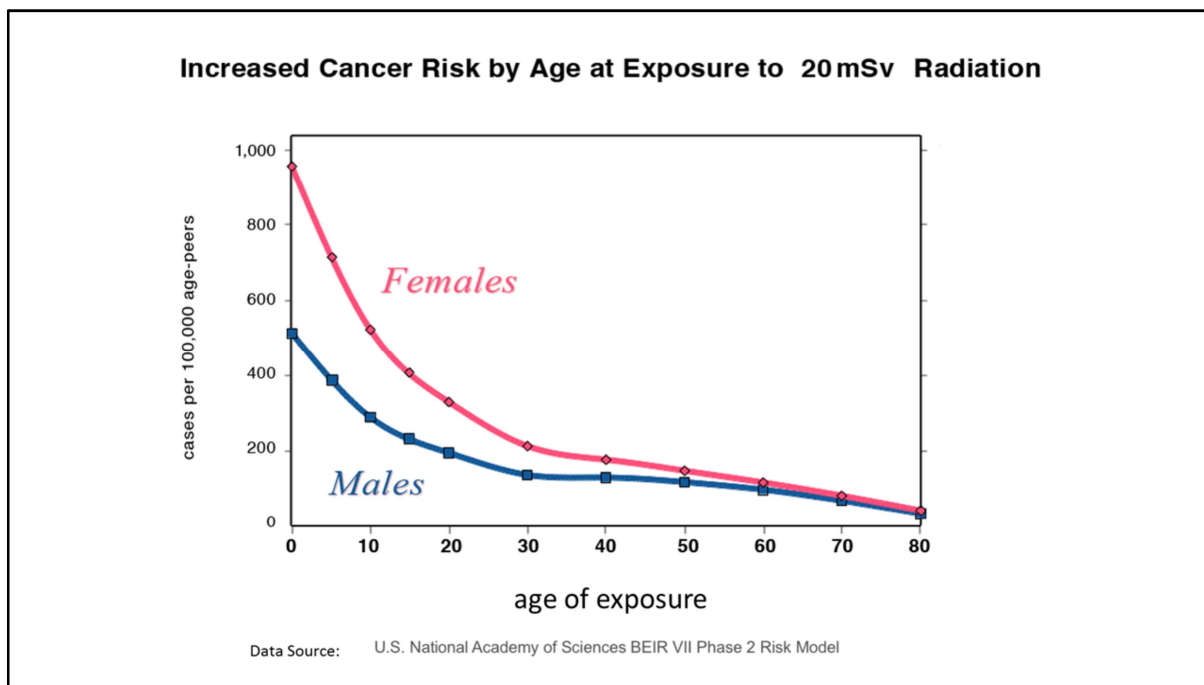
There are many problems with this data, but we can broadly say that those who were five years or younger in August, 1945 had the most cancer at some point in their lives.

Girls in this group were twice as likely to get cancer at some point than were boys.

For every male in the 0-5 cohort that suffered cancer at some point in their lives, **two females** got cancer.

The BEIR VII report is where these numbers are found; the report itself does not discuss gender as a risk factor.

\*\*\*



Here is the same information in graphic form.

Age-of-exposure is at the bottom; numbers of cancers are reported by age cohorts.

The pink line is girls, the blue line is boys.

We can easily see the gender difference and that it is greatest in the youngest children.

The entire graph is a snapshot of our species cancer-response to acute radiation exposure.

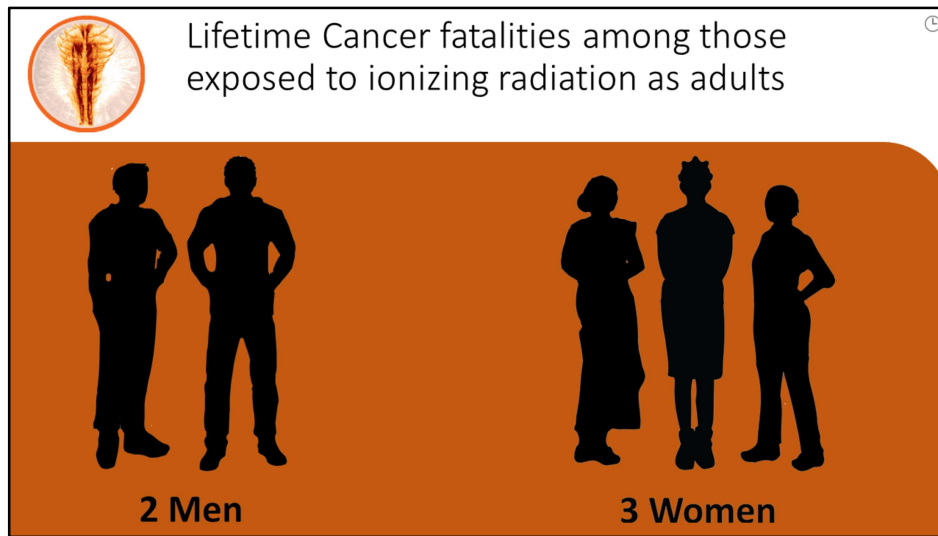
It is likely a picture of any radiation—exposed population including those living in all the testing areas like The Marshall Islands, Semipalitinsk, St. George, Utah and in places like Fukushima.



It is extremely important to understand that little girls are not a “sub-population.”

We are an inextricable part of the human lifecycle.

\*\*\*



Gender was also a factor for those who were adults at the time of the bombings.

Over their lifetime women exposed as adults suffered 50% more cancer death than did men in the same age group.

For every 2 men in these cohorts who died of cancer, **three women** died of cancer.

Dr. Arjun Makhijani and others published a paper in 2006 on gender and radiation. My work was independent from theirs; and was published in 2011 in a paper titled "Atomic Radiation is more Harmful to Women. "

\*\*\*

**Gender and  
Nuclear Weapons**

FRIDAY 23 June  
@ 1:15 pm  
Conference Room B

**Atomic Radiation:**  
More Harmful to Girls and  
Women



On Friday, 23 June we will have a side session

## **Gender and Nuclear Weapons**

@ 1:15 pm  
Conference Room B

I will speak again, unfolding consequences of under-reporting harm from radiation resulting from ignoring gender as a factor.

I hope you will join us.

\*\*\*



This is a picture of health:

These women have recently stopped a nuclear waste dump from being put on their People's Traditional lands.

Radiation prevention is more than avoiding harm. It is a source of health and empowerment.

\*\*\*



I want to say these words in a new way:

PREVENTION IS THE CURE.

\*\*\*



The future is in our hands. Thank you for listening.

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## **Address to UN conference to negotiate a legally-binding instrument to prohibit nuclear weapons, leading to their elimination**

**Roland Oldham, Moruroa e Tatou, Tahiti  
New York 20 June 2017**

The nuclear bomb is a weapon of crime and mass destruction.

We should all be well aware of the examples of Hiroshima and Nagasaki, where the consequences still today have effects across generations.

Like those in other places, nuclear tests in the Pacific by France, America and Britain were a crime towards indigenous people, and the defenceless people of the Pacific. It is a racist crime – nuclear racism. This destroyed and contaminated their environment, the natural resources that they depend on to live. The damages are irreversible.

Look at Moruroa for example – 137 nuclear blasts underneath the coral atoll have severely fractured the atoll which is sinking down into the rising ocean, leaking radioactive gases and plutonium into the sea, risking disastrous damage for marine life. French authorities have assessed that there is a danger of a landslide of 670 million cubic meters of rock at Moruroa, creating a 15-20 meter tsunami.

The responsible governments used the Pacific as a dumping ground for nuclear waste – in the Marshall Islands, Moruroa, Fangataufa, Christmas Island, and elsewhere. Plutonium is in the lagoon of Moruroa and leaking from the 147 underground test explosion holes in Moruroa and Fangataufa. Not to mention the widespread radioactive fallout from atmospheric nuclear explosions.

There are thousands, millions of victims out there around the world - former test and weapons production site workers, military staff, civilians; women and children. They are invisible. They are voiceless. They have cancers: leukemia, thyroid, others, ... . Women in French Polynesia now have the highest rates of thyroid cancer and myeloid leukemia in the world. Their children through many generations will be affected by genetic mutations and damage.

It is a poisonous heritage that is left to humanity and future generations.

It is a crime against humanity.

I don't see much of the word "crime" in the ban treaty: crime against our planet, crime against our environment, crime against humanity. The aim of the treaty is to stop all these crimes.

Why is there no word about these crimes?

Is there pressure from somewhere? Is there censorship?

Have we lost our morality?

But as victims we are not begging for favour, we are just standing up for our rights and our dignity.

There exists an obligation for the nuclear armed states to compensate their victims, and to make reparation for the damage done to the environment.

There must be no more mushroom clouds producing untold numbers of new victims.

# **ANANGUKU ARA – THE ABORIGINAL STORY**



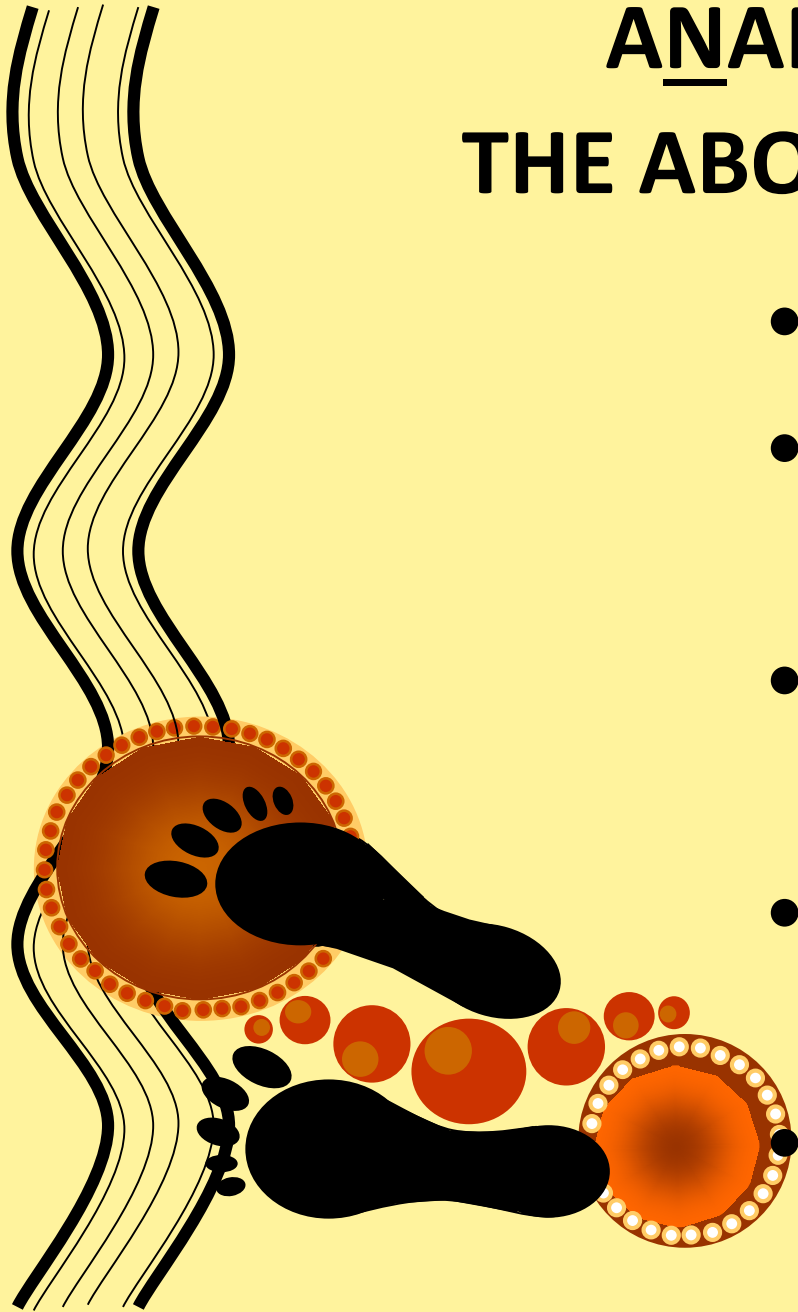
***Anangu fight against the Nuclear Movement,  
IRATI WANTI - The Poison, Leave It***



# **ANANGUKU ARA**

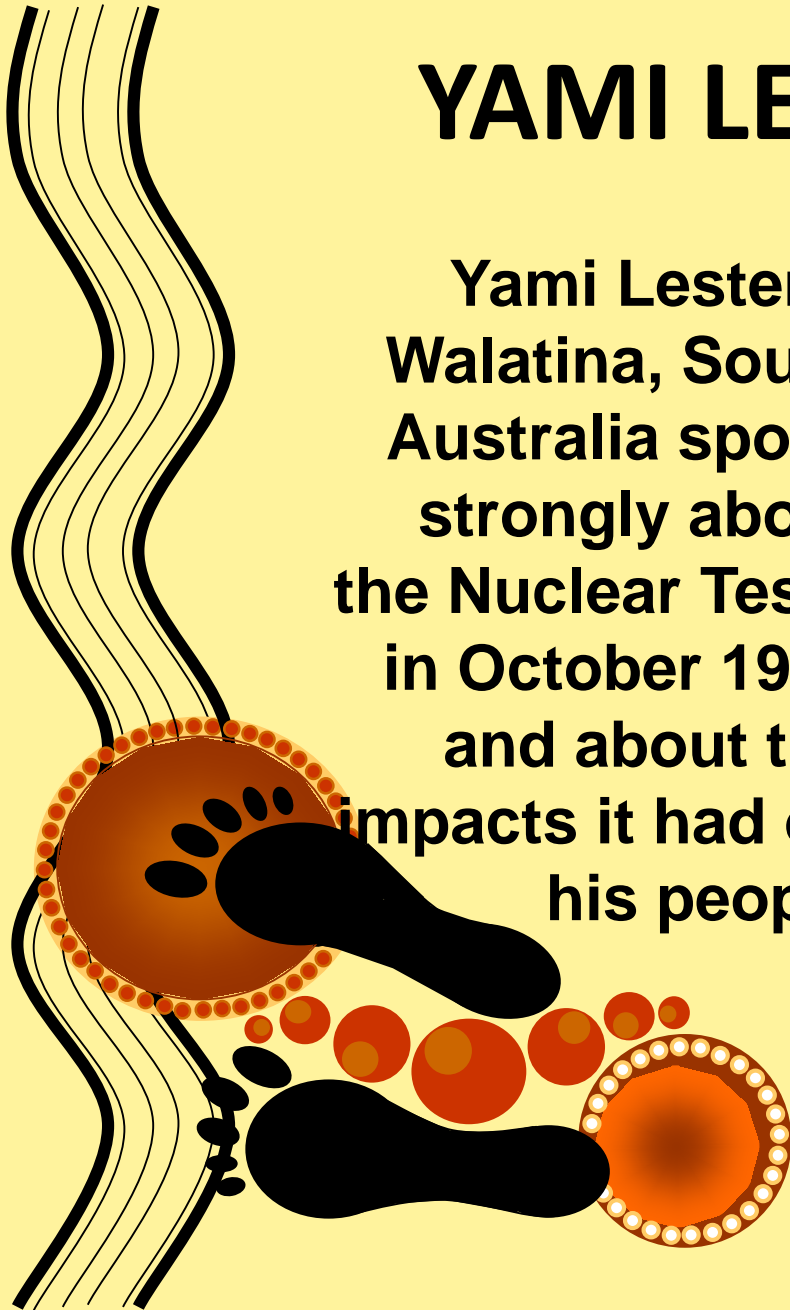
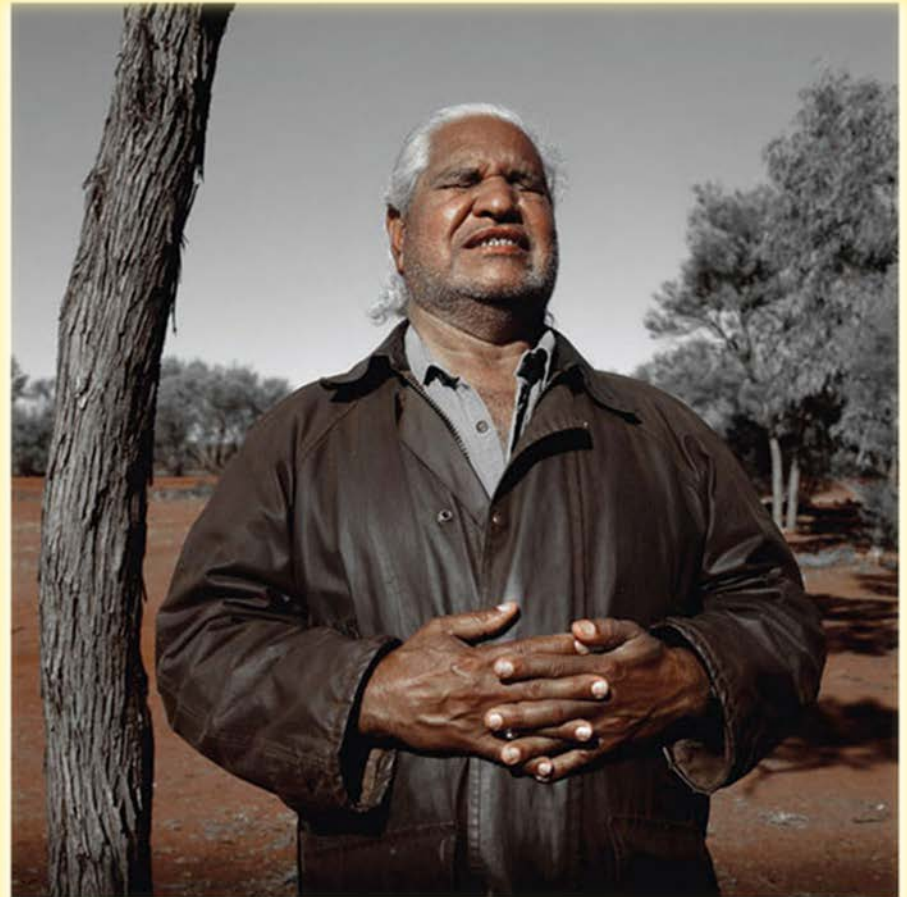
## **THE ABORIGINAL STORY**

- Yami Lester's story
- Tests in South Australia Outback (1950-1960)
- Irati Wanti Campaign (1998-2004)
- South Australian Royal Commission (2015)
- Standing Strong

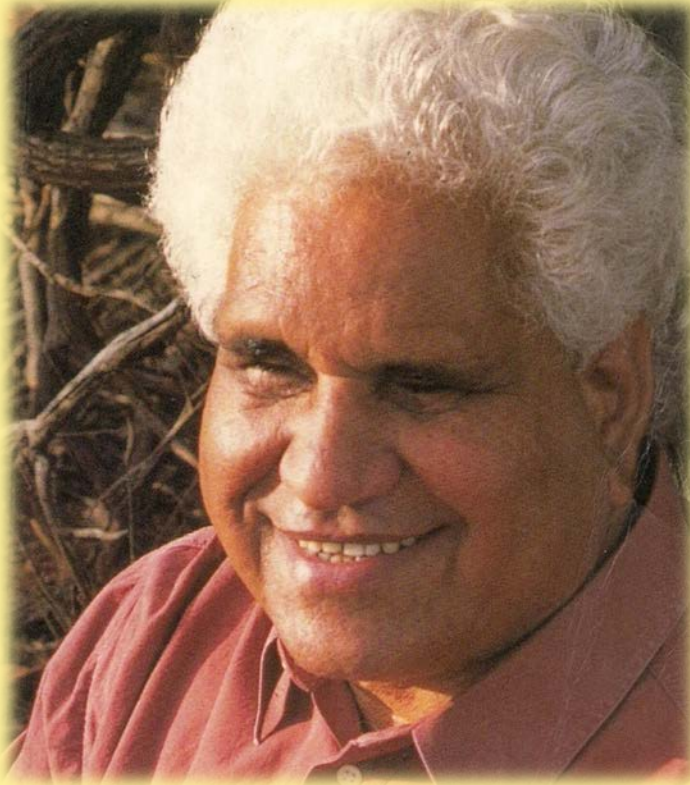


# YAMI LESTER'S STORY

**Yami Lester –  
Walatina, South  
Australia spoke  
strongly about  
the Nuclear Tests  
in October 1953  
and about the  
impacts it had on  
his people**



# **YAMI LESTER'S STORY**



- **Yami Lester – Yankunytjatjara Elder**
- **Living in the region at the time of the tests**
- **Exposed what Anangu suffered at the hands of the British Government**
- **He has been an advocate for Anangu for the loss of lives, land, language, law and culture**
- **Continues to fight against the Nuclear Movement**

# YAMI LESTER'S STORY

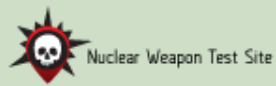


**MUSHROOM CLOUD  
FROM TOTEM ONE**

**TOTEM ONE – 15 OCTOBER 1953**



# NUCLEAR AND URANIUM SITES IN SOUTH AUSTRALIA



Nuclear Weapon Test Site



Operating Uranium Mine



Uranium Export Port



Proposed Waste Dump Site



Former Uranium Plant or Mine



Uranium Deposit



# NUCLEAR TESTS

- **TIMELINE:**
- 2<sup>nd</sup> October 1952 – Monte Bello Islands (WA) first atomic bomb exploded in Australian territory
- October 1953 – June 1956 – Monte Bello Islands and Emu (SA) Four more atomic bombs exploded
- 27<sup>th</sup> September 1956 – Maralinga (SA) first atomic bomb (One Tree)

# NUCLEAR TESTS

- 9<sup>th</sup> October 1957 – Seventh (final) atomic bomb (Taranaki) exploded at Maralinga
- Trials at Maralinga using plutonium that led to the clean-up occurred between 1959 – 1963
- 1984 – Royal Commission into British tests – President JR McClelland recommended clean-up.
- June 1995 – Parliamentary approval for the clean-up to proceed. Completed 1999
- 1 March 2000 – Senator Minchin (Lib) declared Maralinga Clean and Safe
- **HOW CLEAN AND SAFE IS MARALINGA!!!!**

# **IRATI WANTI CAMPAIGN**

## **1998 - 2004**



# IRATI WANTI CAMPAIGN

“We take our responsibilities very seriously towards:

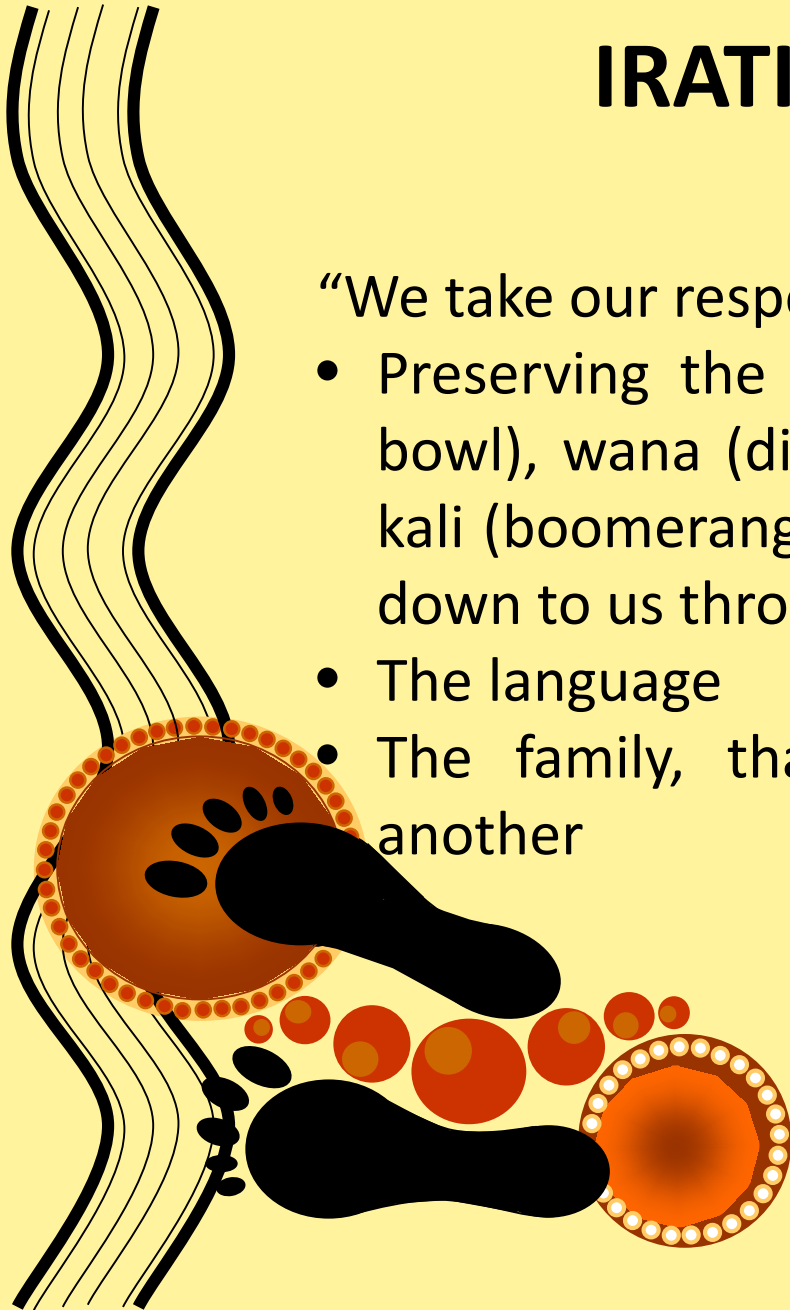
- The land, the country, some of the special places, we know them.
- The Tjukurpa – the important stories of the land
- The songs that prove how the land is
- The inma – song and dance of the culture, all part of the land as well
- The bush tucker that we know and do our best to teach the grandchildren and even tourists when we have the chance



# IRATI WANTI CAMPAIGN

“We take our responsibilities very seriously towards:

- Preserving the traditional crafts; the wira (wooden bowl), wana (digging stick); punu (music sticks), and kali (boomerang) that our grandmothers have passed down to us through the generations
- The language
- The family, that members have respect for one another



# IRATI WANTI CAMPAIGN



2003 Eileen Kampakuta Brown & Eileen Wani Wingfield

# IRATI WANTI CAMPAIGN



**EILEEN WANI WINGFIELD – 2003 RECIPIENT OF THE  
GOLDMAN AWARD**

# ROYAL COMMISSION (SA) INTERNATIONAL WASTE DUMP



COMMISSIONER KEVIN SCARCE AND  
PREMIER JAY WEATHERIL



# ROYAL COMMISSION (SA) INTERNATIONAL WASTE DUMP



**COMMISSIONER KEVIN SCARCE ADDRESSES THE  
MEDIA**

# **ROYAL COMMISSION (SA)**

## **INTERNATIONAL WASTE DUMP**

- South Australian Royal Commission – Terms of Reference
- **Exploration, Extraction and Milling**
- **Further Processing and Manufacture**
- **Electricity Generation**
- **Management, Storage and Disposal of Waste**

# ROYAL COMMISSION (SA)

## INTERNATIONAL WASTE DUMP

- In inquiring into the risks and opportunities associated with mining, processing, electricity generation and waste consideration should be given to their future impact upon the South Australian:
- **Economy** (potential for the development of related sectors and the adverse impact on other sectors.

# ROYAL COMMISSION (SA) INTERNATIONAL WASTE DUMP

- **Environment** (considering lessons learned from past South Australian extraction, milling and processing practices; and
- **Community** (incorporating regional, remote and Aboriginal communities including potential impacts on health and safety)

# STANDING STRONG



**ANTI NUC ABORIGINAL GATHERING – PORT AUGUSTA, 16<sup>TH</sup> MAY 2015**

# STANDING STRONG



**NATIVE TITLE REPRESENTATIVE AT ROYAL COMMISSION FORUM  
PORT AUGUSTA – AUGUST 2015**

# STANDING STRONG



**KOKATHA TRADITIONAL OWNER ADDRESSES  
COMMISSIONER KEVIN SCARCE**

# STANDING STRONG



IRATI WANTI EXHIBITION NIGHT – ADELAIDE 15<sup>TH</sup> OCTOBER 2015

"There's no foreseeable opportunity for this":  
Jay declares nuke dump "dead"



# **BAN THE BOMB!!!**



**IRATI WANTI – THE POISON LEAVE IT**

**THANK YOU**



# Witness to Weapons Complex Contamination in Atomic Appalachia

**Linda Cataldo Modica**  
**Erwin Citizens Awareness Network**

United Nations Conference Room 1  
20 June 2017

We always knew something was wrong in Erwin. Maybe it was the secrecy. Maybe it was the barbed wire. Or the armed guards. Or the commando exercises at the shooting range.

Or maybe it was the cancers. ‘The mountains keep things in’, you know. So, we didn’t mention the “C” word. Or we went out of state, some of us, for treatment. Driven out, really. Since our docs in Erwin were under a lot of pressure from the company.

Or maybe it was the trucks dumping at the Bumpass Cove landfill after dark? Or maybe it was the rumors and stories heard at friends’ homes & at church or from perfect strangers who found your number and gave you a call. Or maybe it was the threats to “outside agitators” to “get out of town” or to “check your rear view mirror”.

Or the questions. So many questions! Where did all that missing bomb-grade uranium go? Why was the FBI called in? Was it stolen? Did terrorists take it? Or was it diverted to Israel for that country’s weapons program? Or is it “just” material unaccounted for – that innocent-sounding acronym, “MUF”?

There's a mountain between our home and Erwin. But for other folks in our nuclear neighborhood, their porches look out onto the companies I need to tell you about. The first is Nuclear Fuel Services -- NFS for short -- in Erwin, Tennessee.

NFS is a 60-year-old radioactive chemical operation owned by Babcock & Wilcox. It is the sole supplier of reactor fuel to the Navy's nuclear submarine fleet and, as such, is essential to the maritime prong of the nuclear triad. Since its founding in Erwin -- midway between Oak Ridge and the Savannah River Site -- this corporation has functioned as a "mini-DOE", as one former NFS employee once told us.

And by "us" or "we", I mean Erwin Citizens Awareness Network. ECAN for short. We're a community group incorporated by me, Barbara O'Neal -- an Erwin native and the smartest and toughest activist and government document analyst I have ever worked with. And by Trudy Wallack -- a downstreamer whose property lies along the Nolichucky River into which NFS discharges and who is one of ECAN's most elegant spokeswomen. And with the help of Sue Kelley who tirelessly synthesized and organized hundreds of NRC reports for ECAN. Together with Chris Tipton, Ann Harris and Park Overall, we constitute what the NRC calls "The Wall of Women".

To give you an idea of the lay of the land in "Atomic Appalachia", the Nolichucky River meanders through our region. The river cut gorges in the mountains, and laid out a wide floodplain in the foothills. The Nolichucky is the source of

municipal drinking water for the residents of two counties downstream of NFS. While wells and springs provide the city water pumped by Erwin Utilities.

NFS set up its secret operations along the river. In a bowl, really. The streets of the old town of Erwin rise up from NFS so that the company's short stacks are at grade with people's homes and yards and churches. The geology is complex and constantly changing. Sinkholes open up sporadically, making groundwater flows unpredictable. Springs & creeks abound, including on NFS's site. Fault lines criss-cross the town.

This old railroad hub existed long before NFS. So did the modest homes on Washington Street. And so did Banner Hill Spring where folks traditionally collected mountain spring water. It was next to Banner Hill Spring that NFS built its plutonium processing facility in the mid-Sixties.

And it was, in part, because of that spring – and the Wall of Women -- that the US government declared NFS a “public health hazard”. True story.

We made the feds hear us. Not for ourselves, but for our kids and our neighbor's kids. About that time, a baby was born with cancer & it made big news in Erwin because he had to be taken to St. Jude's Hospital across the state in Memphis.

Also about that time, County economic development types were working to bring a uranium enrichment plant to Unicoi, a town just up the road from Erwin. A brave business owner opened his doors for community meetings and mothers came out.

Their kids were in school near NFS & they asked what would happen if uranium hexafluoride was released by the new factory. Would the emergency drill used in Erwin work? Would stuffing wet paper towels around the classroom windows help? “No. Sorry.” The scientist said. “A cloud of UF<sub>6</sub> will burn everything in its path, and even melt the windows of the school. Just a whiff of UF<sub>6</sub> will eat up their lungs”. The horror we visualized took our breath away. But we knew that the scientist was right.

The sad truth is that Erwin's kids don't only live under a cloud of fear. That cloud, formed by the nuclear weapons complex, also pours down radioactive rain on them.

Up until recently, Erwin was a place where radiation-warning signs hung within feet of backyard kiddie playgrounds. The tenants with the kids who used that playground were evicted after NFS learned that they had spoken with a documentary crew who filmed that hideous scene. It took another few years, but NFS ultimately bought out and demolished most of the homes that abutted its fence line. Still, NFS continues to spew Plutonium out its stacks and rains down on the town of Erwin -- Uranium-234, 235, & 238, Thorium-228, 230, & 232 as well as Technetium-99.

And, if children were playing in the creeks or swimming in the Nolichucky downstream of NFS, they would be subjected to Americium-241, Cesium-137, Neptunium-237, radioactive sodium and lead, Radium-224, Technetium-99, 5 isotopes of uranium, 4 of thorium, and 4 isotopes of plutonium – a veritable bath of poisons. Again, this list is from NRC reports.

But there's another military contractor in Atomic Appalachia that I need to tell you about. And that's Aerojet in Jonesborough. This supplier of Depleted Uranium weapons to the Army has also contaminated our environment and the bodies of workers. Thanks to one Christian Peacemaker delegation of CPT Stop-DU campaigners, I met a man who milled DU into penetrator cores at his offsite workshop. The man could no longer stand straight. He leaned. Not because one leg was much shorter than the other, but because of the neurological damage he suffered from DU exposure.

The neighbor across the road from Aerojet has seen a lot too. He told me and others in CPT of how an iridescent plume blew out of one of Aerojet's stubby vents one morning, how it rose up about 90 feet, how it floated behind the factory, and then disappeared from sight. He watched from his front porch as people in hazmat suits covered the roof vents. He saw that workers didn't come in for days. Parking lots were empty. When he called the company, the State, and the NRC, no one would even admit that an accidental release had occurred.

Bottom line: both military contractors dump weapons waste into our air & lungs, into our recreational & drinking water, and – either directly or through fallout from their smoke stacks -- onto the land where our kids play, our gardens grow, our pets hang out or our livestock graze.

It will come as no surprise to you, then, to hear that cancer is rampant in Atomic Appalachia.

In nuclear neighborhoods like mine, kids aren't living long enough to play Little League or go to their first dance. Take Washington Street in Erwin for example. Thanks to an 80-year-old lady who went door-to-door along the street where her sister died of Non-Hodgkin's Lymphoma, we know that every third home in her neighborhood had a cancer case or cancer death. The mother, father & two sons who lived in the home closest to NFS all died from cancer.

Armed with unimpeachable data derived from 193 environmental samples that CPT helped us collect, ECAN made presentations to the National Academy of Sciences, to the Chairwoman of the NRC, and to NRC staff. We proved that NFS had contaminated 95 river-miles of the Nolichucky all the way to where the river empties into Douglas Lake. We insisted that NFS be included in the new study of cancer incidence around nuclear facilities -- and we got it! We argued that NRC should finally do an EIS on NFS' decrepit operations & not extend its license -- and failed miserably. After the government granted NFS a 25-year license extension, the NRC pulled the cancer study, whining that it would (quote) "cost too much".

So, if you needed proof that the arms trade is all about money -- "money that is drenched in blood, often innocent blood"<sup>1</sup>, to quote Pope Frances -- I'm here to testify to that fact loud and clear.

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<sup>1</sup> <http://www.usccb.org/about/leadership/holy-see/francis/papal-visit-2015/media-resources/upload/11-EN-congressional-address.pdf>, p. 11/4

But I'm also here to plead with you – especially if you are party to the ban negotiations. Please end the sacrifice of our children, our innocent Appalachian children.

As a mother, and on behalf of Jonesborough and Erwin moms who fear for their kids' lives -- or mourn their loss -- I thank you for your time.