Michele, Jessilyn, Sheldon & Utah

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Michele Garner, Jessilyn Turner, Sheldon Nisson. All three children were born in southern Utah in the United States in the 1950s. Michele was seven, Jessilyn, nine, and Sheldon, thirteen, when they died of cancer attributed to atmospheric nuclear testing. They were roughly the same age as my children are now.

On 27 January 1951 the Atomic Energy Commission (AEC) detonated a one-kiloton nuclear bomb, dropped from an airplane at Frenchman Flat, the first of nearly 1,000 nuclear explosion tests at U.S. government-controlled property in Nevada. The AEC press release promised that atomic tests would be conducted "with adequate assurances of safety". Patriotic citizens of southern Utah and the surrounding states who lived immediately downwind of the test site initially believed what they were told. As one historian wrote: "Their faith and trust in their government would not allow them to even consider the possibility that the government would ever endanger their health."

PREPARING FOR A POSSIBLE NUCLEAR ATTACK

Declassified AEC transcripts released nearly 30 years later show that scientists knew, and decision makers ignored, as early as 1947 that fission particles released from atomic bomb testing could be deadly to humans and animals alike exposed both during and after the tests. Residents, eager to trust their government and fearful of a nuclear attack from the Soviet Union, built bomb shelters, stored extra food and practiced bomb drills at school, doing their best to be prepared for the possibilities of the nuclear threat.

Scott M. Matheson, father of current Utah Congressman Jim Matheson, served as the Governor of Utah from 1977 to 1985 and moved to southern Utah just after testing began. He recollected: "People in southern Utah were mainly concerned with making a living, and I don't recall anyone being too upset about the brilliant flashes and thunder-like blasts that were part of the 1953 atomic testing. ...People were concerned about the sheep deaths that occurred in May 1953, but when the AEC said there was nothing to worry about, we all just shrugged our shoulders. No one really accepted the malnutrition rationale, but we were used to accepting whatever the government said, especially during that very nationalistic period."

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The 1970 Baneberry "underground" nuclear test at the Nevada Test Site, USA.

In 1979, nearly 30 years after nuclear testing began at the Nevada Test Site, then Governor Matheson held hearings which included over 1,100 pages of testimony detailing the AEC cover-up and the increasingly apparent consequences faced by Utahans, years before he personally would feel those very effects.

Scott Matheson died from multiple myeloma, a rare form of cancer, on 7 October 1990. This came merely two days after the U.S. Congress passed the Radiation Exposure Compensation Act (RECA) in an attempt to compensate those suffering from cancer and a number of other diseases attributed to the fallout from nuclear testing.

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After her death in 1966, Michele Garner's father reportedly said: "The thought of radiation fallout did cross my mind although the authorities said it was harmless." A 1955 AEC brochure had reassured the public that the radiation from nuclear testing "does not constitute a serious hazard to any living thing outside the test site."

UNDERGROUND NUCLEAR EXPLOSIONS WERE NOT ALWAYS CONTAINED SUCCESSFULLY

Yet the danger persisted even when testing moved underground in 1963. Nuclear test crews did not always succeed in containing the explosions, causing a release of radioactive dust into the atmosphere. The 1970 Baneberry test turned into one of the worst radiological incidents in U.S. history.

Even when an underground test is successfully contained, certain radioactive substances linger for thousands of years in the ground, threatening not only the soil, but ground water as well.

The effects were not limited to Utah. According to the National Cancer Institute's revised estimates in 1999, exposure to radioactive iodine from the Nevada atmospheric tests would produce between 11,300 and 212,000 excess lifetime cases of thyroid cancer[1]. Persons who were children during the period of exposure would be at higher risk.

As the casualties piled up, families throughout Utah banded together, resulting in a series of resolutions being passed in the Utah legislature. These included HCR 1 (2001) and HCR 7 (2005), and culminated in a unanimous bipartisan vote on 2010's HR 004 that I co-sponsored with Representative Jennifer Seelig (Democrat), calling for U.S. Senate ratification of the Comprehensive Nuclear-Test-Ban Treaty (CTBT). The plight of the casualties was acknowledged at the federal level in 2011 with the designation of 27 January – the day of the first test at Nevada – as the National Day of Remembrance for Downwinders.

The federal government decided to stop U.S. nuclear testing in 1992. There are no active plans to resume U.S. nuclear testing, yet despite overwhelming

[1] National Academies Press (U.S.) 1999 report. *Exposure of the American People to Iodine-131 from Nevada Nuclear-Bomb Tests: Review of the National Cancer Institute Report and Public Health Implications.*

evidence, the Nevada Test Site is kept on standby to resume testing. The United States is not alone: the door remains open for other countries to resume nuclear testing, threatening to rattle global security – and anyone who happens to live downwind.

THE CTBT: PUTTING AN END TO ALL NUCLEAR EXPLOSIONS

Fortunately, a solution is within reach. An international treaty outlawing all nuclear testing exists, but it has yet to enter into force. The 1996 CTBT bans all nuclear tests in all environments, including underground. The United States was the first to sign the CTBT, but it still needs to ratify along with seven other countries listed in the Treaty as nuclear technology holders.

While U.S. ratification may not prompt all of the remaining States to follow suit immediately, China and Israel are likely to do so, followed by India and Pakistan. Iran would have a much harder time claiming that its nuclear programme is purely peaceful while not ratifying the CTBT. Egypt is likely to come on board when most others have done so. And North Korea, presumably the most stubborn of the holdout States, would face stronger international pressure to stop its nuclear testing and missile programme.

CTBT ratification was rejected in the U.S. Senate in 1999, a decision that many Republicans supported, myself included. One key concern that led to many "no" votes was how and whether the Treaty could help detect and deter cheating by others while the United States faithfully abides by the rules. A justified question, to which there was no satisfactory answer at the time. Yet today there is.

THE WORLD'S MOST SOPHISTICATED MULTILATERAL VERIFICATION SYSTEM

Over the past 15 years, the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) in Vienna, Austria, has established the world's most sophisticated multilateral verification system. Over 300 stations around the globe constantly monitor the ground, the air and the oceans for shockwaves and catch the faintest sniff of radioactivity. The system detected all three North Korean nuclear tests in 2006, 2009 and 2013; the tests all received universal condemnation. The 2012 report by the U.S. National Academy of Science confirms the CTBT's capabilities, especially when combined with the United States' own impressive means of surveillance.

The other concern that was raised in 1999 was whether our arsenal could be maintained in the absence of explosive testing. This has been addressed as well. The nation's Stockpile Stewardship and Management Program, which was still in its infancy back then, has proven to be highly reliable and effective. George Shultz, former U.S. Secretary of State in the Reagan administration at the height of the Cold War, stated in April 2009: "[Republicans] might have been right voting against [the CTBT] some years ago, but they would be right voting for it now, based on these new facts."

In short, ratification ensures that we can both preserve our nuclear deterrent, and prevent further proliferation both at home and by enemies abroad.

THE "ABSURDITY" OF NUCLEAR WEAPONS

A few years ago, I had a conversation with former Air Force pilot, NASA astronaut, and retired U.S. Senator from Utah, Jake Garn. Senator Garn related the story about the moment that he first saw the Earth while in orbit aboard the Space Shuttle Discovery. I will never forget his description of what he saw: that from space, there are no lines; no borders; no artificial divisions among nations. Pausing, he reflected on "the absurdity" of nuclear weapons – and the imaginary concept that the consequences of their use will stop at the border.

1955 federal government brochure on the effects of nuclear testing.

The National Cancer Institute Study found traces of Iodine 131 as a result of nuclear testing in every county in the nation, with hotspots where nuclear clouds had settled throughout the intermountain west and as far away as upstate New York.

The premature deaths of hundreds of thousands of people in the United States and around the world from nuclear fallout cannot be undone. However, we do have the chance to silence nuclear testing forever. We have both the opportunity and responsibility to leave our children a safer world than Michele, Jessilyn and Sheldon ever had.

Ratification is no longer a matter of an unknown, undetectable threat. Today, it is a matter of political courage. It is a matter of will.

BIOGRAPHICAL NOTE

RYAN D. WILCOX
served in the Utah House of Representatives in the United States from 2009 to 2014. Representative Wilcox was the Chairman of the House Revenue and Taxation Committee. He also served on the House Natural Resources, Agriculture, and Environment Committee, and House Public Utilities & Technology Committees. In national politics he has continuously supported ratification of the CTBT. He currently serves as Northern Utah Director with the United States Senate.