

*Addressing Humanitarian and Environmental Harm from Nuclear Weapons:*

## Nuclear Veterans and Radioactive Fallout Aotearoa New Zealand

*‘You will ... appreciate ... [the] question which is increasingly being asked by average citizen in this part of the world—“why, if there is no danger from these tests, do the British and Americans not hold them near to home?”’*

– Aotearoa New Zealand Prime Minister Keith Holyoake, writing to the British government in 1973

### Executive Summary

Between 1952 and 1958, Aotearoa New Zealand military personnel participated in nuclear weapon tests carried out by the UK and the US, in Australia and Kiribati. Members of Aotearoa New Zealand’s armed forces were also exposed to radiation during the Allied occupation of Japan following the atomic bombing of Nagasaki and Hiroshima, and later, when protesting against France’s nuclear testing in French Polynesia. Aotearoa New Zealand nuclear veterans claim that their health, and their descendants’ health, were adversely affected by exposure to ionizing radiation. Their concerns are supported by independent medical research. The 2017 Treaty on the Prohibition of Nuclear Weapons, of which Aotearoa New Zealand is a state party, obligates assistance to victims, including veterans, and remediation of contaminated environments.

### Recommendations

Aotearoa New Zealand should:

1. Encourage states to sign and **RATIFY** the Treaty on the Prohibition of Nuclear Weapons.
2. Assess and **RESPOND** to the humanitarian needs of survivors.
3. Survey and **REMEDiate** contaminated environments in the Pacific.
4. **RESPECT**, protect and fulfill the human rights of nuclear test survivors.
5. **RETELL** the stories of the humanitarian and environmental impact of the tests.



Figure 1: Ambassador Dell Higgie of Aotearoa New Zealand during the 2017 negotiations of the Treaty on the Prohibition of Nuclear Weapons at the UN in New York. Photo: Clare Conboy/ICAN.

## Exposure to Aftermath of Atomic Bombing in Japan

Between 1945 and 1973, Aotearoa New Zealand<sup>1</sup> military and naval personnel were exposed to nuclear weapon use and testing while assisting in, or protesting against, a number of operations.

Following the US detonation of nuclear bombs at Hiroshima and Nagasaki in August 1945, Aotearoa New Zealand took part in the occupation of Japan as part of the British Commonwealth Occupation Force (BCOF). The BCOF consisted of 35,000 troops from Australia, Britain, India and Aotearoa New Zealand.<sup>2</sup> Aotearoa New Zealand's force, commonly known as 'Jayforce', comprised an infantry brigade group and 14 squadron from the Royal

New Zealand Air Force (RNZAF). In total, 12,000 New Zealanders served in Jayforce.

Jayforce's main responsibilities were demilitarization, demobilization and policing. One of Jayforce's initial deployments was at Eta Jima Island, parts of which are within 10 miles of Hiroshima's city limits.<sup>3</sup> The US-government definition of veterans exposed to harmful doses of ionising radiation includes personnel that had official military duties within 10 miles of the city limits of Hiroshima or Nagasaki between August 1945 and July 1946.<sup>4</sup> It is unclear how many Aotearoa New Zealand personnel were deployed on Eta Jima Island, or for how long they were there.

### Key Indicators of Humanitarian, Human Rights and Environmental Harm

- 12,000 Aotearoa New Zealand soldiers risked exposure to radiation while participating in the British Commonwealth Occupation Force (BCOF), following the atomic bombings in Hiroshima.
- Aotearoa New Zealand troops were deployed to UK test sites (11 troops in Australia; 551 in Kiribati).
- 551 New Zealand Navy sailors deployed to protest 1973 French nuclear tests at Moruroa Atoll.
- Many BCOF and test veterans have health problems consistent with exposure to radiation; descendants also report multi-generational health problems.
- Aotearoa New Zealand, as well as the Cook Islands, Niue and Tokelau, were exposed to fallout from French Pacific nuclear testing from 1966 to 1974. The population (4.6 million people) may be considered at risk of being victims of nuclear weapons testing.
- Venting and leaching of radioactive materials from France's underground test sites into the ocean poses environmental risks to the South Pacific region.

Position on the Treaty on the Prohibition of Nuclear Weapons (TPNW)

State Party

Official Development Assistance (OECD DAC Status)?

Donor country

<sup>1</sup> Note on spellings and place names: When covering the colonial period, the report uses English or French names places, such as 'Christmas Island' and 'Gilbertese.' When referring to contemporary post-colonial states where there is wide consensus on names, the report will use their naming and spelling conventions, such as 'Kiritimati' and 'I-Kiribati.' Where there is a persistent dispute over names I will use both, listing first the legally-recognized name, such as 'French Polynesia/Te Ao Maohi.' Given the emerging convention, the report uses Aotearoa New Zealand as the country name that includes both the indigenous and Anglicized names. Unless their ethnicity is specified, people from New Zealand/Aotearoa are referred to as 'New Zealanders.' For 'Moruroa', the report uses the indigenous Maohi spelling, rather than the French 'Mururoa', since that is also the conventional spelling in English.

<sup>2</sup> New Zealand History. 'Main Body of Jayforce lands in Japan, 19 March 1946.' <<https://nzhistory.govt.nz/jayforce-arrives-in-japan>>.

<sup>3</sup> New Zealand Veterans' Affairs. 'Research about New Zealand's nuclear veterans.' <<https://www.veteransaffairs.mil.nz/about-veterans-affairs/our-documents-and-publications/research/research-about-new-zealands-nuclear-veterans/>>.

<sup>4</sup> New Zealand Veterans' Affairs. 'Research about New Zealand's nuclear veterans.' <<https://www.veteransaffairs.mil.nz/about-veterans-affairs/our-documents-and-publications/research/research-about-new-zealands-nuclear-veterans/>>.

## Nuclear Testing in Australia

On 3 October 1952, the United Kingdom carried out its first nuclear test, *Operation Hurricane*, at the Montebello Islands in Western Australia. The RNZAF assisted in monitoring radioactive fallout by conducting flights to take air samples 3,500 miles from ground zero.<sup>5</sup> Three aircraft made flights north and south of Auckland, while a fourth aircraft made a return flight to Suva, Fiji. Three of the aircraft collected significant radioactivity, however the Royal Commission into British Nuclear Tests in Australia concluded that the aircraft contamination was below permissible levels.<sup>6</sup>

In September 1956, the UK commenced tests of four nuclear devices at Maralinga in South Australia. A group of 11 New Zealanders from the New Zealand Army, the Royal New Zealand Navy (RNZN) and RNZAF were sent to observe the tests and to report back on the experience to their colleagues.<sup>7</sup> They worked as part of the Indoctrinee Force, a group of largely British and Australian military personnel tasked with detailing the effects of nuclear weapons, including by visiting the area around 'ground zero' after detonations and testing the impact of blasts on military equipment and weapons.<sup>8</sup>

## Nuclear Testing in Kiribati

From 1957 to 1958, the UK carried out *Operate Grapple*, a series of nuclear air burst tests at Christmas and Malden Islands, then part of the Gilbert and Ellice Islands Colony (GEIC), in the Central Pacific, now part of the Republic of Kiribati. Before GEIC was chosen as the location, British Prime Minister Sir Anthony Eden had approached his Aotearoa New Zealand counterpart, Sidney Holland, seeking use of Aotearoa New Zealand's uninhabited Kermadec Islands.<sup>9</sup> However, concerned about the political ramifications of such a project, Holland refused the request. To restore goodwill following this refusal, Holland agreed to send the Aotearoa New Zealand

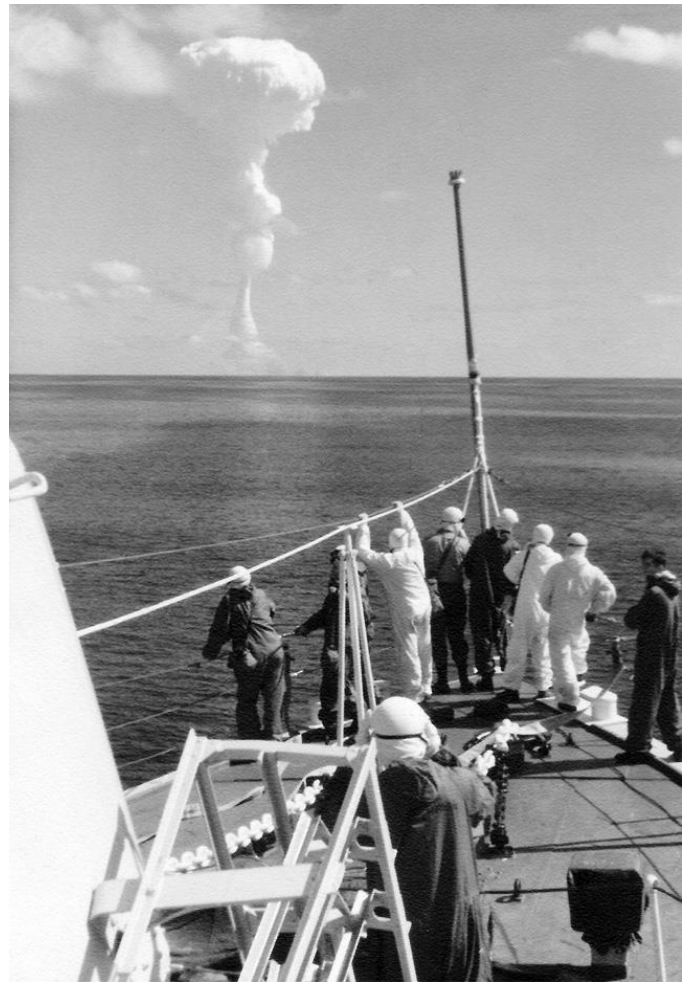


Figure 2: On the quarter deck of HMNZS *Pukaki* preparing for the first *Operation Grapple* UK nuclear weapons test in Kiribati, May 1957. Photo courtesy of Roy Sefton.

warship HMNZS *Lachlan* to investigate potential sites under the guise of scientific research for the International Geophysical Year (a collaborative scientific project involving researchers from both the Eastern and Western

<sup>5</sup> Australian Government Department of Veterans' Affairs. '4.1 Operation Hurricane (detonation on 3 October 1952 at Monte Bello Island, W.A.)?' *Liability Handbook*. <<http://clik.dva.gov.au/military-compensation-srca-manuals-and-resources-library/liability-handbook/ch-30-appendices/appendix-4-notes-royal-commission-british-nuclear-test-participants/41-operation-hurricane-detonation-3-october-1952-monte-bello-island-wa>>.

<sup>6</sup> McClelland Royal Commission. (1985) *The Report of the Royal Commission into British Nuclear Tests in Australia*. Vol I. Canberra. pp. 117 and 133. <[https://archive.industry.gov.au/resource/Documents/radioactive\\_waste/RoyalCommissioninToBritishNucleartestsinAustraliaVol%201.pdf](https://archive.industry.gov.au/resource/Documents/radioactive_waste/RoyalCommissioninToBritishNucleartestsinAustraliaVol%201.pdf)>.

<sup>7</sup> Hon Mark Burton, Minister of Veterans' Affairs. (15 July 2001). 'Nuclear test investigation completed.' *Media Statement*. <<https://www.veteransaffairs.mil.nz/assets/Research/Nuclear-Test-investigatation-media-statement-15-July-2001.pdf>>.

<sup>8</sup> New Zealand Veterans' Affairs. 'Research about New Zealand's nuclear veterans.' <<https://www.veteransaffairs.mil.nz/about-veterans-affairs/our-documents-and-publications/research/research-about-new-zealands-nuclear-veterans/>>.

<sup>9</sup> Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p.35.



**Figure 3: New Zealand telegraphist Roy Sefton on witnessing the first *Grapple* test aboard HMNZS *Pukaki*: ‘We were all sat down with our backs to the blast and you were required to put your hands over the goggles you were wearing and close your eyes. There was this horrific flash. You could see the bones of your hands.’ Photo courtesy of Roy Sefton.**

blocs).<sup>10</sup> In February and March 1964, Christmas Island and Malden Island were identified as potential test sites.

Between May 1957 and September 1958, two Aotearoa New Zealand frigates with 551 personnel on board acted as weather ships for the *Operation Grapple* tests (HMNZS *Pukaki* for 10 tests and HMNZS *Rotoiti* for five).<sup>11</sup> The frigates’ main task was to collect meteorological information, which was essential for the safe and successful execution of the tests. The frigates were also tasked with air/sea rescue, anti- submarine watch, thermal flash monitoring and water sampling to test for radiation contamination.<sup>12</sup> Radiation was only detected on one instance when, on 29 April 1958 *Pukaki* passed through surface zero the day after a test.<sup>13</sup> Aotearoa New Zealand involvement in *Operation Grapple* also included three New Zealanders who were sent to observe a test in May 1957 from a Royal Navy ship stationed 30 miles from Malden Island.<sup>14</sup>

Aotearoa New Zealand military personnel also witnessed nuclear tests carried out by the United States in 1957 and 1958. One officer was invited to observe a test in Nevada, and one RNZAF member observed an underwater explosion at the Eniwetok Atoll in the Marshall Islands.<sup>15</sup>

## Fallout from French Pacific Nuclear Testing

Starting in 1957, Aotearoa New Zealand established a monitoring system to detect radiation levels across the Pacific, sampling air, water, milk and fish at stations in Aotearoa New Zealand, the Cook Islands, Niue, Western Samoa, Tonga and the GEIC (now the Republic of Kiribati and Tuvalu). (See Figure 4). When the French carried out the Bételgeuse test in 1966, detonating a 120 kiloton device from a tethered balloon 600 meters in the air above the Moruroa Atoll in French Polynesia, the Aotearoa New Zealand monitoring station in Apia detected increased “background radioactivity by a factor of 1,850, from 0.2 GBq/km<sup>2</sup> to 370 GBq/km<sup>2</sup>”.<sup>16</sup> Elevated radioactivity was also detected by Aotearoa New Zealand’s

<sup>10</sup> Nic Maclellan. (2017) *Grappling with the Bomb: Britain’s Pacific H-Bomb Tests*. Acton, ANU Press. p.35.

<sup>11</sup> New Zealand Veterans’ Affairs. ‘Research about New Zealand’s nuclear veterans.’ <<https://www.veteransaffairs.mil.nz/about-veterans-affairs/our-documents-and-publications/research/research-about-new-zealands-nuclear-veterans/>>.

<sup>12</sup> John Crawford. (1989) *The Involvement of the Royal New Zealand Navy in the British nuclear testing programmes of 1957 and 1958*. New Zealand Defence Force, Wellington. p. 18.

<sup>13</sup> John Crawford. (1989) *The Involvement of the Royal New Zealand Navy in the British nuclear testing programmes of 1957 and 1958*. New Zealand Defence Force, Wellington. p. 52.

<sup>14</sup> John Crawford. (2001) *New Zealand Observers and Indoctrinees at Nuclear Weapon Tests: 1956-1958*. NZDF 3320/4/2. New Zealand Defence Force, Wellington. p. 12.

<sup>15</sup> John Crawford. (2001) *New Zealand Observers and Indoctrinees at Nuclear Weapon Tests: 1956-1958*. NZDF 3320/4/2. New Zealand Defence Force, Wellington. p. 12-15.

<sup>16</sup> IPPNW. (n.d.) ‘Fangataufa and Moruroa, French Polynesia.’ *Hibakusha Worldwide*. <<http://www.nuclear-risks.org/en/hibakusha-worldwide/fangataufa-and-moruroa.html>>.

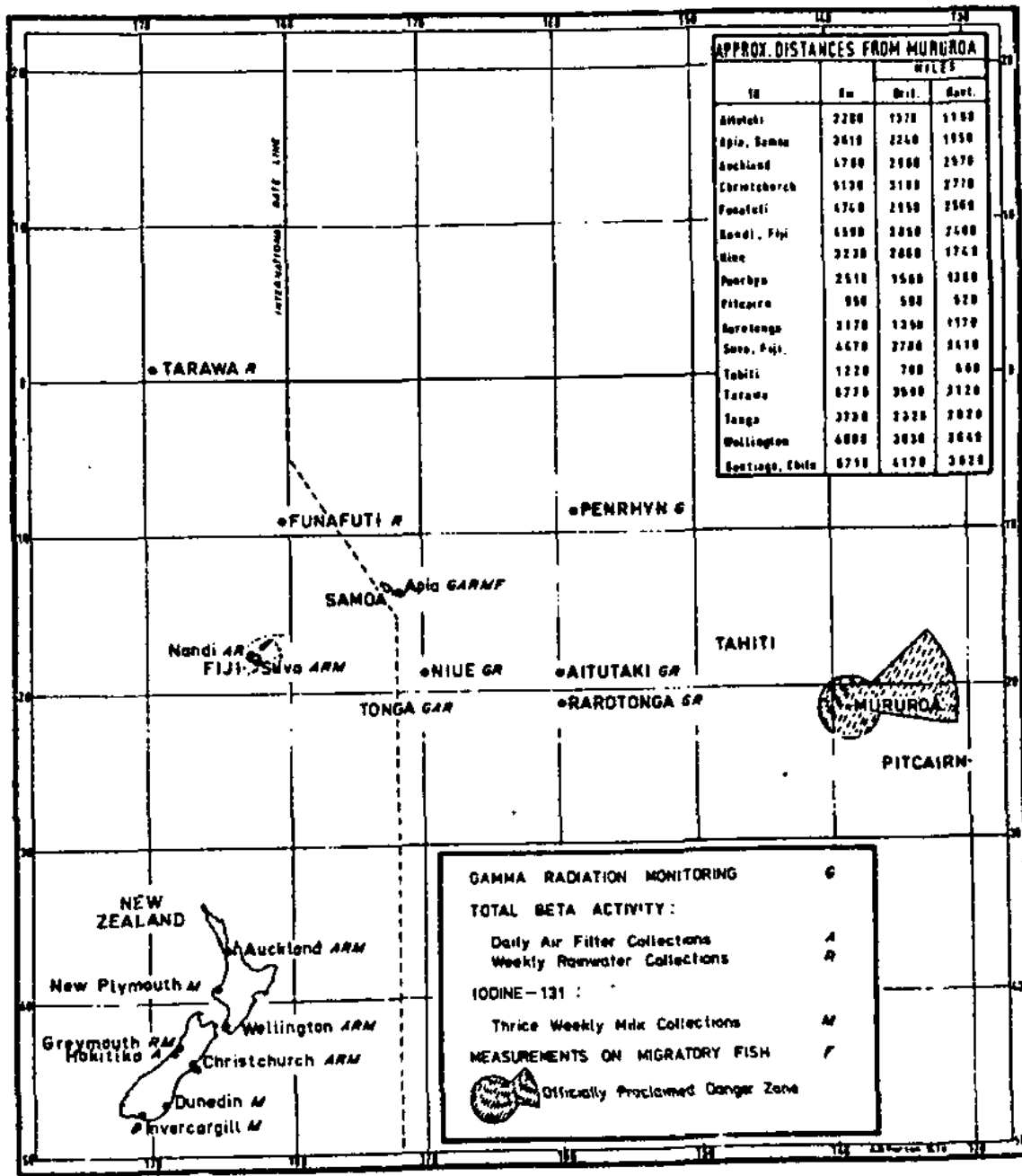


Figure 4: Map of New Zealand's Radiation Monitoring Stations in the South Pacific. Source: 1974 New Zealand submission NRL-F/51 to New Zealand vs. France. p. 305.

stations in Niue, Cook Islands and Fiji in the days following the test, indicating that they too were subject to tropospheric fallout.

From the late 1950s to 1960s, Aotearoa New Zealand public opposition to nuclear weapons began to grow. Prime Minister Keith Holyoake, writing to the British government in 1957 to confirm further deployment of

Aotearoa New Zealand ships for the testing program, commented 'You will, I am sure, appreciate [the] logic of [the] question which is increasingly being asked by average citizen in this part of the world—"why, if there is no danger from these tests, do the British and Americans not

hold them near to home?”<sup>17</sup> In July 1973, the Aotearoa New Zealand government sent two RNZN frigates to protest French nuclear weapon testing in French Polynesia. Stationed at the Moruroa Atoll, the HMNZS *Otago* and the HMNZS *Canterbury* each observed a nuclear trigger test from a distance more than 20 nautical miles from the detonation. The ships’ radiation detection equipment did not detect any radiation.<sup>18</sup>

## Humanitarian and Human Rights Impact

During early UK tests, military personnel were given protective suits and film badges to monitor their exposure to radiation. However, it was later discovered through lawsuits with the British government that the film was never processed. Moreover, protective and monitoring measures declined over the course of the testing program. Film footage of the *Grapple X* test depicts military personnel in only their uniforms.<sup>19</sup> Roy Sefton, a New Zealand telegraphist posted on HMNZS *Pukaki* described how safety measures fell to the wayside: ‘I contrast conditions under the first test with those for *Grapple Y*, which was the biggest test that they did ... For the *Grapple Y* test, the ship was not closed down into damage control and as I stood on deck, I watched it in a pair of shorts and flip-flops. It was that casual, there was no “blast stations.”’<sup>20</sup>

In 2001, as part of an investigation into Aotearoa New Zealand involvement in nuclear testing, the Aotearoa New Zealand government identified 11 military personnel who had observed British and American nuclear tests in the 1950s. Five of the observers had passed away. The Ministry of Health advised that it was extremely unlikely

that any of the recorded causes of death were linked to observation of the tests.<sup>21</sup> None of the six living observers were on War Disablement Pensions for a condition on the conclusively-presumed list for ionising radiation.<sup>22</sup>

However, as in the United Kingdom, the Aotearoa New Zealand government’s position on the impact of nuclear testing has been strongly contested by veterans and medical research. Independent medical studies generally back the claims of survivors that exposure to the nuclear tests could have negative health implications. The UK’s National Radiological Protection Board (NRPB) found elevated levels of leukemia among 22,000 veterans of the Christmas Island and Australian tests.<sup>23</sup> These results were supported by Neal Pearce of the Wellington School of Medicine in 1990 and 1996 who found that Aotearoa New Zealand test veterans had an increased risk of leukemia.<sup>24</sup> While the NRPB and Pearce studies broadly support the veterans’ claims, they have been heavily criticized by test veterans and medical researchers for their methodology and for underestimating the health impact of the tests.<sup>25</sup>

A 1999 survey of 2,500 men who participated in UK nuclear tests (2,200 UK, 238 Aotearoa New Zealand and 62 Fijian) by Sue Rabbit Roff found that two-thirds of respondents who had died had cancers. Data on the 5,000 children and grandchildren of 1,000 such veterans found elevated rates of health problems consistent with multigenerational effects of radiation exposure, including a rate of spina bifida at five times the UK average.<sup>26</sup> The NRPB disputed Roff’s results, claiming there is ‘no detectable effect on the participants’ expectation of life, nor on their risk of developing cancer or other fatal diseases.’<sup>27</sup> Similarly, the UK Pensions and Armed Forces

<sup>17</sup> Barry Gustafson. (2007) *Kivi Keith—a biography of Keith Holyoake*. Auckland University Press, Auckland. p.180.

<sup>18</sup> New Zealand Veterans’ Affairs. ‘Research about New Zealand’s nuclear veterans.’ <<https://www.veteransaffairs.mil.nz/about-veterans-affairs/our-documents-and-publications/research/research-about-new-zealands-nuclear-veterans/>>.

<sup>19</sup> C R Tukker. (2008) ‘The First British Hydrogen Bomb.’ <[https://www.youtube.com/watch?time\\_continue=81&v=UhnjkbDotYI](https://www.youtube.com/watch?time_continue=81&v=UhnjkbDotYI)>.

<sup>20</sup> Nic Maclellan. (2017) *Grappling with the Bomb: Britain’s Pacific H-Bomb Tests*. Acton, ANU Press. p.214.

<sup>21</sup> Hon Mark Burton, Minister of Veterans’ Affairs. (15 July 2001). ‘Nuclear test investigation completed.’ *Media Statement*. <<https://www.veteransaffairs.mil.nz/assets/Research/Nuclear-Test-investigation-media-statement-15-July-2001.pdf>>.

<sup>22</sup> New Zealand Veterans’ Affairs. ‘Research about New Zealand’s nuclear veterans.’ <<https://www.veteransaffairs.mil.nz/about-veterans-affairs/our-documents-and-publications/research/research-about-new-zealands-nuclear-veterans/>>.

<sup>23</sup> S.C. Darby, et al. (1988) ‘A summary of mortality and incidence of cancer in men from the United Kingdom who participated in the United Kingdom’s atmospheric nuclear weapon tests and experimental programmes.’ *British Medical Journal*. 296. pp. 332-338.

<sup>24</sup> Neal Pearce et al. (1990) *Mortality and Cancer Incidence in New Zealand Participants in United Kingdom Nuclear Weapons Tests in the Pacific*. Wellington, Wellington School of Medicine; Neal Pearce. (1996) *Mortality and Cancer Incidence in New Zealand Participants in United Kingdom Nuclear Weapons Tests in the Pacific: Supplemental Report*. Wellington, Wellington School of Medicine.

<sup>25</sup> Nic Maclellan. (2017) *Grappling with the Bomb: Britain’s Pacific H-Bomb Tests*. Acton, ANU Press. pp. 295-296.

<sup>26</sup> Sue Rabbitt Roff. (1999) ‘Mortality and morbidity of members of the British Nuclear Tests Veterans Association and the New Zealand Nuclear Tests Veterans Association and their families.’ *Medicine, conflict and survival*. 15(Suppl. 1). pp. i-ix, 1-51.

<sup>27</sup> In: Lorna Arnold. (2001) *Britain and the H-Bomb*. London, Palgrave Macmillan. p. 243.

Compensation Chamber described Roff's methodology (survey questionnaire) as 'less than ideal as there is a potential source of bias....'.<sup>28</sup>

However, the most methodologically-rigorous study to date, led by Dr Al Rowland at Massey University's Institute of Molecular Biosciences, found that a sample group of Aotearoa New Zealand *Grapple* test veterans showed three times the frequency of chromosomal abnormalities compared with the control group. This finding was based on genetic analysis of blood samples taken from the veterans. The researchers concluded, after 'a careful comparison of the veterans and the controls for possible confounding factors, together with a close analysis of the scientific literature in related studies' that the damage was likely attributable to radiation exposure.<sup>29</sup> In 2009 the Ministerial Advisory Group on Veterans' Health assessed this research, and found that the results of Dr Rowland's study 'do provide evidence that the nuclear test veterans were exposed to ionising radiation'.<sup>30</sup>

An ongoing study of *Grapple* veterans has struggled to find sufficient participants, given the length of time that has passed since the tests.<sup>31</sup> Nevertheless, since the publication of Dr Rowland's landmark work, other studies have demonstrated health impacts on British test veterans, including serious illness and reproductive difficulties.<sup>32</sup> Reviewing the evidence and literature on harm from testing in the Pacific, Dr. Tilman Ruff in the International Review of the Red Cross, concluded that 'Any and all

levels of ionizing radiation exposure, including doses too low to cause any short-term effects or symptoms, are associated with increased risks of long-term genetic damage, chronic disease and increases in almost all types of cancer, proportional to the dose.'<sup>33</sup>

Research has also documented the 'psychological fallout' suffered by test veterans.<sup>34</sup> A government-funded study completed in 2005 found that Operation *Grapple* veterans were 'markedly more depressed', had worse self-reported physical and mental health, and greater self-reported memory difficulties compared to an age-matched control group.<sup>35</sup> Research for a doctoral dissertation at Massey University also found that Aotearoa New Zealand test veterans exhibited 'more depressive symptoms' than a control group. The study suggested that anxiety about the ongoing and potential health implications of their exposure to the tests caused a form of 'chronic anxiety'.<sup>36</sup>

## Environmental Concerns

Throughout the 1960s, the Aotearoa New Zealand public and government became increasingly concerned by the environmental effects of nuclear tests carried out in the region. In 1973, New Zealand instituted proceedings in the International Court of Justice (ICJ), seeking to block further French testing of nuclear weapons in the South Pacific.<sup>37</sup> New Zealand's submissions in this case noted that stratospheric fallout tends to fall 'in the mid latitudes of the hemisphere in which the nuclear weapons tests were

<sup>28</sup> War Pensions and Armed Forces Compensation Chamber. (December 2016) *Decision: Ministry of Defence vs. Abdale et al.* p. 70. <<http://www.llrc.org/campaigns/testvets/testvettranscripts//Determination.pdf>>.

<sup>29</sup> Wahab, M. A. et al. (2008) 'Elevated chromosome translocation frequencies in New Zealand nuclear test veterans'. *Cytogenetic and Genome Research*, 121(2), 79-87; Rowland, R.E. et al. (2007) 'New Zealand Nuclear Test Veterans' Study – a Cytogenetic Analysis' A report presented to the New Zealand Nuclear Test Veterans' Association. <[https://www.massey.ac.nz/~wwpubafs/2007/Press\\_Releases/nuclear-test-vets-report.pdf](https://www.massey.ac.nz/~wwpubafs/2007/Press_Releases/nuclear-test-vets-report.pdf)>

<sup>30</sup> Letter from Professor John Campbell, Chair, Ministerial Advisory Group on Veterans Health to Minister of Veterans' Affairs Judith Collins (23 December 2010). <[www.veteransaffairs.mil.nz/assets/Veterans-Affairs-site-assets/Research/32.pdf](http://www.veteransaffairs.mil.nz/assets/Veterans-Affairs-site-assets/Research/32.pdf)>.

<sup>31</sup> Susie Boniface. (8 April 2018) 'Scientists trying to prove Cold War nuclear weapons tests on servicemen caused genetic damage can't find enough survivors to test.' *Mirror*. <<https://www.mirror.co.uk/news/uk-news/scientists-trying-prove-cold-war-12326858>>.

<sup>32</sup> Rebecca Miles, et al. (2011) 'British Nuclear Test Veterans Health Needs Audit Commissioned by the UK Ministry of Defence.' Miles and Green Associates. <[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/16592/20111027NTVsMODHealthNeedsAuditFi](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/16592/20111027NTVsMODHealthNeedsAuditFi)>; Christopher Busby and Mireille Escande de Messieres. (2014) 'Miscarriages and Congenital Conditions in Offspring of Veterans of the British Nuclear Atmospheric Test Programme.' *Epidemiology*. 4(4). doi:10.4172/2161-1165.1000172.

<sup>33</sup> Tilman A. Ruff. (2015) 'The humanitarian impact and implications of nuclear test explosions in the Pacific region.' *International Review of the Red Cross*. 97(899). pp. 775-813.

<sup>34</sup> Rebekah Leigh Johnson. (2009) "'Psychological Fallout': The Effects of Nuclear Radiation Exposure.' Doctor of Clinical Psychology thesis, Massey University. <[https://mro.massey.ac.nz/bitstream/handle/10179/1425/02\\_whole.pdf](https://mro.massey.ac.nz/bitstream/handle/10179/1425/02_whole.pdf)>.

<sup>35</sup> Assoc. Prof. John Pond et al. (2005). 'New Zealand Nuclear Test Veterans Study – A Pilot Project (Psychological Impact)'. Massey University, Palmerston North. p. 41. <<https://www.veteransaffairs.mil.nz/assets/Research/NZ-Nuclear-Test-Veterans-Study-Psychological-Impact.pdf>>.

<sup>36</sup> Rebekah Leigh Johnson. (2009) "'Psychological Fallout': The Effects of Nuclear Radiation Exposure.' Doctor of Clinical Psychology thesis, Massey University. p. 47. <[https://mro.massey.ac.nz/bitstream/handle/10179/1425/02\\_whole.pdf](https://mro.massey.ac.nz/bitstream/handle/10179/1425/02_whole.pdf)>.

<sup>37</sup> Nuclear Tests (New Zealand v. France), 1973 I.C.J. 457 (Dec. 20).



**Figure 5: New Zealand’s legal representatives in the ICJ nuclear test case in The Hague, 1973 (left to right) Solicitor General R. C. Savage, Attorney General Martyn Finlay and R. Q. Quentin-Baxter. Photo: [www.teara.govt.nz](http://www.teara.govt.nz).**

conducted.’ This means it that ‘tropical Pacific islands receive less of the stratospheric long-lived fallout than countries in the temperate zone, such as New Zealand.’<sup>38</sup> The ICJ’s preliminary order determined that the ‘French Government should avoid nuclear tests causing the deposit of radioactive fall-out on the territory of New Zealand, the Cook Islands, Niue or the Tokelau Islands.’<sup>39</sup> The Court declined to make a more comprehensive ruling when France stopped atmospheric testing.

Included in the evidence submitted by New Zealand to the ICJ was a report by the New Zealand National Radiation Laboratory detailing the environmental radioactive fall-out from nuclear weapon tests conducted by France in the South Pacific during July and August 1973. The report noted that trace levels of fresh fission products from the first 1973 test were detected in some Aotearoa New Zealand air filters.<sup>40</sup> At around the same time, slight

increases in the radioactivity of weekly rain collections were measured and iodine-131 was detected at low levels in several milk samples.<sup>41</sup>

France persisted in conducting underground tests until 1991. Following a brief moratorium, France renewed Pacific underground tests in 1995 and 1996 before signing the Comprehensive Test Ban Treaty (CTBT) in September 1996. Despite France’s claims to the contrary, underground nuclear weapons testing also posed threats to the people and environments of the Pacific region. In 1995, Aotearoa New Zealand and Australia, joined by Samoa and several other Pacific states, sought to reopen the International Court of Justice case. Aotearoa New Zealand’s submissions in *New Zealand and Australia vs. France* asserted that there was evidence that the underground detonations ‘vent’ radioactive materials into the atmosphere. Moreover, the nuclear tests had ‘generated very large quantities of radioactive material’ which ‘remain within the structure of the atoll.’ Aotearoa New Zealand thus characterized Mururoa and Fangataufa Atolls as de facto ‘nuclear waste “stockpiles”’, warning that ‘If all or substantial parts of this material were to be released into the marine environment, the effect upon marine natural living resources, especially fish and plankton, could be significant. Radionuclides released into the water are concentrated as they pass through the food chain to higher organisms. The effects would be distributed through the marine ecosystem, affecting highly migratory species - including tuna – on which people of the region rely for sustenance and trade.’ Aotearoa New Zealand noted that there was ‘reason to fear that the risks of a significant release of radioactive material from either or both of the atolls...are substantially higher than was previously believed to have been the case’, whether as a result of ‘a

<sup>38</sup> New Zealand. (1973) ‘Annex VII: Effects of French Nuclear Testing on Radiation Levels in New Zealand.’ Request for the Indication of Interim Measures of Protection Submitted by the Government of New Zealand. Nuclear Tests (New Zealand v. France). p. 82. <<http://www.icj-cij.org/files/case-related/59/10731.pdf>>.

<sup>39</sup> International Court of Justice. (1973) ‘Order of 22 June 1973.’ Reports of Judgments, Advisory Opinions and Orders: Nuclear Tests Case (New Zealand v. France): Request For The Indication Of Interim Measures Of Protection Order Of 22 June 1973. p. 142. <<http://www.icj-cij.org/files/case-related/59/059-19730622-ORD-01-00-EN.pdf>>.

<sup>40</sup> ‘Report of November 1973 by the New Zealand National Radiation Laboratory’, Issued by the New Zealand Department of Health under No. NRL-F/51 and Entitled ‘Environmental Radioactivity Fall-out from Nuclear Weapon Tests Conducted by France in the South Pacific During July and August 1973, and Comparisons with Previous Test Series’ in *Documents Submitted to the Court After the Filing of the Memorial* at p. 303.

<sup>41</sup> ‘Report of November 1973 by the New Zealand National Radiation Laboratory’, Issued by the New Zealand Department of Health under No. NRL-F/51 and Entitled ‘Environmental Radioactivity Fall-out from Nuclear Weapon Tests Conducted by France in the South Pacific During July and August 1973, and Comparisons with Previous Test Series’ in *Documents Submitted to the Court After the Filing of the Memorial* at p. 303.





**Figure 6: Craig Hawke, Permanent Representative of New Zealand to the United Nations, signing the Treaty on the Prohibition of Nuclear Weapons at the United Nations in New York, 20 September 2017. Photo: Darren Ornitz/ICAN.**

serious collapse or fissuring of the atolls.’<sup>42</sup> The French government has since acknowledged that Moruroa Atoll risks collapsing.<sup>43</sup>

In 1981, at the request of the British Overseas Development Administration, the New Zealand Radiation Laboratory did a radiological survey of Christmas Island (now Kiritimati). The survey found no significant deposits of radioactive fallout.<sup>44</sup> However, there were gaps in the study’s methodology (see the Kiritimati report in this series for further details).

At the Second Conference on the Humanitarian Impact of Nuclear Weapons in Nayarit, Mexico, in February 2014,

Ambassador Dell Higgie noted that Aotearoa New Zealand remains alert to the environmental consequences of tests carried out in the Pacific: ‘For instance – at some financial cost, and entirely as a result of this testing – New Zealand continues monthly radiation testing of NZ milk products in order to be able to reassure our export destinations about NZ’s radiation levels. We do similar analysis of rainwater samples on a weekly basis.’<sup>45</sup> Reports on environmental radioactivity in New Zealand – specifically atmospheric radioactivity, radioactive

<sup>42</sup> New Zealand. (1995) ‘Request for an Examination of the Situation.’ *Nuclear Test Cases: New Zealand and Australia vs. France*. pp. 12-17. <<http://www.icj-cij.org/files/case-related/97/7187.pdf>>.

<sup>43</sup> ABC. (2014) ‘Effects of nuclear tests in French Polynesia remains a major concern: veterans.’ *ABC News*. <<http://www.abc.net.au/news/2014-02-21/an-french-polynesia-upgrades-former-nuclear-sites/5276042>>.

<sup>44</sup> New Zealand Veterans’ Affairs. ‘Research about New Zealand’s nuclear veterans.’ <<https://www.veteransaffairs.mil.nz/about-veterans-affairs/our-documents-and-publications/research/research-about-new-zealands-nuclear-veterans/>>.

<sup>45</sup> New Zealand. (13-14 February 2014) ‘Final Statement.’ Second Conference on the Humanitarian Impact of Nuclear Weapons. Nayarit, Mexico.

deposition, and radioactivity in milk – are published annually on the Ministry of Health’s website.<sup>46</sup>

## Victim Assistance and Environmental Remediation Obligations in the TPNW and Other International Norms

The Treaty on the Prohibition of Nuclear Weapons (TPNW), adopted at the UN in 2017, frames nuclear weapons as an affront to humanity and acknowledges the humanitarian and environmental harm of use and testing, including the disproportionate impact on women and girls and indigenous peoples. The International Campaign to Abolish Nuclear Weapons (ICAN) received the 2017 Nobel Peace Prize for its advocacy to achieve the treaty. Aotearoa New Zealand was one of the first countries to sign the TPNW on 20 September 2017, and ratified the treaty on 31 July 2018. Australia, the UK and USA boycotted the treaty negotiations.

In addition to banning nuclear weapons, the TPNW obliges states that join it to address the harm inflicted on people and the environment from nuclear weapons use and testing. Article 6(1) requires affected states parties to assist victims ‘in accordance with applicable international humanitarian and human rights law’, adequately providing ‘age-and gender-sensitive assistance, without discrimination, including medical care, rehabilitation and psychological support’ to survivors and to ‘provide for their social and economic inclusion.’ Article 6(2) requires affected states parties to take ‘necessary and appropriate measures towards the environmental remediation of areas’ contaminated by nuclear weapons use or testing.

The Treaty also encourages the international community to retell the stories of those who have suffered the humanitarian, human rights and environmental impact of nuclear weapons use and testing. The TPNW’s preamble emphasizes ‘the importance of peace and disarmament education ... and of raising awareness of the risks and consequences of nuclear weapons for current and future generations.’ The Treaty particularly recognizes the contributions of ‘the *hibakusha*’ (victims of nuclear

weapons) as voices of ‘public conscience.’ It expresses a commitment ‘the dissemination of the principles and norms’ of the TPNW, which in Article 12 obligates states to universalizing the Treaty.

Joining the TPNW entitles affected states to international cooperation and assistance so that they can meet their obligations to help victims and remediate the environment. To ensure that an undue burden is not placed on affected states, Article 7 obliges states parties in a position to do so to provide ‘technical, material and financial assistance to States Parties affected by nuclear-weapons use or testing’ (Article 7(3)). Given the range of types of assistance, all states parties should be able to assist in some way. Such assistance, according to Article 7(5), can be provided through the UN system, ‘international, regional or national’ institutions, bilateral assistance, NGOs or the Red Cross and Red Crescent Movement.

Article 7(6) explicitly requires states parties that have ‘used or tested nuclear weapons or any other nuclear explosive devices’ to contribute to ‘adequate assistance to affected States Parties, for the purpose of victim assistance and environmental remediation.’

In the 2018 Pacific Islands Forum Communiqué ‘Leaders reaffirmed their commitment to addressing the outstanding security threats from nuclear legacy issues, including radioactive contaminants’ and called ‘on all responsible parties to rectify the ongoing impacts of contaminants in our Ocean to sustain our future generations.’ Pacific leaders ‘directed the Forum Secretariat, in coordination with ... [regional institutions], to further advance national and regional efforts towards a just and final resolution, including through Forum international engagement and advocacy.’ The Communiqué ‘encouraged individual member countries to progress efforts’ toward signature and ratification of the TPNW.<sup>47</sup>

The TPNW builds upon other crucial legal instruments on nuclear weapons. Aotearoa New Zealand is a party to the Treaty of Rarotonga, which established the South Pacific Nuclear Free Zone. The Treaty’s preamble expresses a determination to ‘ensure...that the bounty and beauty of the land and sea in their region shall remain the heritage of

<sup>46</sup> Ministry of Health Library. ‘Environmental radioactivity in New Zealand and Rarotonga: annual report.’ <[www.moh.govt.nz/NoteBook/nbbooks.nsf/0/AA1E1E2081AEB42F4C2565D7000E0CB5?opendocument](http://www.moh.govt.nz/NoteBook/nbbooks.nsf/0/AA1E1E2081AEB42F4C2565D7000E0CB5?opendocument)>.

<sup>47</sup> Pacific Islands Forum. (6 September 2018) ‘Forty-Ninth Pacific Islands Forum: Communiqué.’ <[https://foreignminister.gov.au/releases/Pages/2018/mp\\_mr\\_180906a.aspx](https://foreignminister.gov.au/releases/Pages/2018/mp_mr_180906a.aspx)>.

their peoples and their descendants in perpetuity to be enjoyed by all in peace' and 'to keep the region free of environmental pollution by radioactive wastes and other radioactive matter.'

Aotearoa New Zealand is also party to the 1996 Comprehensive Test Ban Treaty (CTBT), which established a global ban on nuclear weapons testing. The CTBT will not enter into force until all states with nuclear technological capacity sign and ratify it. Nevertheless, it has established a global norm against nuclear weapons testing, strengthened by the TPNW (the UK, France and Russia are state parties; the USA signed in 1996 but has not yet ratified). The CTBT establishes a global verification regime to monitor compliance. Aotearoa New Zealand runs six CTBT monitoring facilities across the country: three auxiliary seismic stations to monitor underground explosions; one infrasound facility to provide real-time information on atmospheric explosions; and two radionuclide stations for atmospheric explosions and venting from underground explosions.<sup>48</sup> It also hosts a radionuclide laboratory in Christchurch, which provides independent additional analysis of International Monitoring System samples.<sup>49</sup>

## Existing Capacities for Addressing Harm to New Zealanders from Nuclear Weapons

While Aotearoa New Zealand's aversion to nuclear weapons and nuclear testing built throughout in the 1960s, certain key events in the 1970s and 1980s catalyzed public opposition and solidified Aotearoa New Zealand's anti-nuclear stance.

The first were France's nuclear tests in the Moruroa atoll, which, as mentioned above, led Aotearoa New Zealand to send two frigates to Moruroa in protest, and to bring the

case against France in the ICJ. Visits by nuclear-powered American warships to Aotearoa New Zealand also emerged as key points of controversy. The visits of two cruisers in 1976, and a submarine in 1978 and 1979, sparked protests, and each time Civil Defence established a public safety headquarters for the duration of the visit.<sup>50</sup> In 1983, guided missile cruiser USS *Texas* was greeted with widespread protests, and nuclear ships became a prominent issue in the following year's election. In addition to concern over their nuclear power, the public was uneasy with the possibility that the ships were also nuclear-armed (a fact that the US would neither confirm nor deny).<sup>51</sup> By 1983, public opposition to visits from nuclear-armed ships had risen to 72 percent. The 1984 general election saw the Labour party voted in on a policy of keeping the nuclear warships out. And in March 1985, New Zealanders watched with satisfaction as Prime Minister David Lange spoke at the Oxford Union's televised debate, successfully arguing the proposition that 'nuclear weapons are morally indefensible.'<sup>52</sup>

A further defining moment in Aotearoa New Zealand's anti-nuclear history came in July of 1985 when the Greenpeace flagship *Rainbow Warrior* was bombed in Auckland. The *Rainbow Warrior* was moored in Marsden Wharf, on its way to protest a planned French nuclear test in the Moruroa. French Secret Service (DGSE) agents were sent to prevent it from leaving. A Greenpeace photographer was killed in the explosion. The two DGSE agents were convicted of manslaughter, but were decorated and promoted upon their release from prison and return home.<sup>53</sup> The incident led to a severe deterioration in France-Aotearoa New Zealand relations, and cemented Aotearoa New Zealand's anti-nuclear foreign affairs policy.<sup>54</sup>

<sup>48</sup> CTBTO Preparatory Commission. 'Country Profiles: New Zealand'. <[www.ctbto.org/the-treaty/countryprofiles/?country=123&cHash=a89fe05af2289a1c06da78c5bcea855d](http://www.ctbto.org/the-treaty/countryprofiles/?country=123&cHash=a89fe05af2289a1c06da78c5bcea855d)>; Jeremy Bulleid et al. (2005) 'Keeping the global environment safe: monitoring for the nuclear test ban treaty.' *Water & Atmosphere* 13(1). <[www.niwa.co.nz/sites/niwa.co.nz/files/import/attachments/nuclear.pdf](http://www.niwa.co.nz/sites/niwa.co.nz/files/import/attachments/nuclear.pdf)>.

<sup>49</sup> CTBTO Preparatory Commission. 'Country Profiles: New Zealand'. <[www.ctbto.org/the-treaty/countryprofiles/?country=123&cHash=a89fe05af2289a1c06da78c5bcea855d](http://www.ctbto.org/the-treaty/countryprofiles/?country=123&cHash=a89fe05af2289a1c06da78c5bcea855d)>; CTBTO Preparatory Commission. 'Radionuclide Monitoring'. <[www.ctbto.org/verification-regime/monitoring-technologies-how-they-work/radionuclide-monitoring/](http://www.ctbto.org/verification-regime/monitoring-technologies-how-they-work/radionuclide-monitoring/)>.

<sup>50</sup> New Zealand History. 'Ship Visits.' *Nuclear-free New Zealand*. <<https://nzhistory.govt.nz/politics/nuclear-free-new-zealand/ship-visits>>.

<sup>51</sup> New Zealand History. 'Ship Visits.' *Nuclear-free New Zealand*. <<https://nzhistory.govt.nz/politics/nuclear-free-new-zealand/ship-visits>>.

<sup>52</sup> David Lange. (1985/2004) 'Nuclear Weapons are Morally Indefensible.' *Great NZ Argument*. <<https://publicaddress.net/great-new-zealand-argument/nuclear-weapons-are-morally-indefensible/>>.

<sup>53</sup> New Zealand History. 'Sinking the Rainbow Warrior.' *Nuclear-free New Zealand*. <<https://nzhistory.govt.nz/politics/nuclear-free-new-zealand/rainbow-warrior>>.

<sup>54</sup> New Zealand History. 'Sinking the Rainbow Warrior.' *Nuclear-free New Zealand*. <<https://nzhistory.govt.nz/politics/nuclear-free-new-zealand/rainbow-warrior>>; New Zealand Herald. (10 July 2015) 'At the end of the Rainbow.' <[www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=10656635](http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10656635)>.

Aotearoa New Zealand was one of the first countries to float the proposition of a nuclear-weapon free South Pacific. In 1975, with the backing of the South Pacific Forum, Aotearoa New Zealand, Fiji and Papua New Guinea sponsored a resolution calling for a nuclear weapon-free zone in the South Pacific (SPNWFZ), which was later adopted by the UN General Assembly.<sup>55</sup> At the South Pacific forum in 1983, Australia re-tabled the concept of a SPNWFZ, and the following year a Working Group was appointed to draft a treaty text. The South Pacific Nuclear-Free Zone Treaty (Treaty of Rarotonga) was adopted by the 13 members of the South Pacific Forum on 6 August 1985, the 40<sup>th</sup> anniversary of the Hiroshima bombing. In 1987, Aotearoa New Zealand incorporated the treaty into domestic law, passing the New Zealand Nuclear Free Zone, Disarmament, and Arms Control Act and establishing the country as a nuclear weapon free zone.

By 1990, parties across the political spectrum had adopted an anti-nuclear stance.<sup>56</sup> Along with the events of the 1970s and 1980s, this political consensus was also the result of decades of work by a grass-roots movement of New Zealanders and civil society to convince the public and government of the danger of nuclear weapons. This movement included faith-based organisations, sports groups, students, Māori/tangata whenua, women's groups, business networks, doctors' and lawyers' associations: by 1986, there were 350 active, local-area peace groups working on nuclear issues.<sup>57</sup>

The Aotearoa New Zealand anti-nuclear activist community remains active today. In 2011, the New Zealand Red Cross Society joined nine other Pacific Red Cross Societies and 29 others around the world in co-sponsoring a resolution in calling for a 'legally-binding instrument' to prohibit nuclear weapons.<sup>58</sup> Six Aotearoa New Zealand-based organizations are partners of ICAN,<sup>59</sup>

and four New Zealanders representing civil society attended the 2017 TPNW negotiations at the UN.

Reflecting on Aotearoa New Zealand's involvement in the nuclear ban treaty, Dr Lyndon Burford, one of the civil society representatives at the negotiations, commented that 'becoming nuclear free helped to redefine New Zealand's national identity in a fundamental way. I am passionate about New Zealand disarmament policy because our country does great work in this area.'<sup>60</sup>

The Aotearoa New Zealand government has remained at the forefront of nuclear disarmament issues at the international level, and was a firm proponent of the humanitarian re-framing of nuclear disarmament. Speaking at the First Conference on the Humanitarian Impact of Nuclear Weapons in Oslo, March 2013, Aotearoa New Zealand's Disarmament Ambassador Dell Higgie stated "This meeting...in looking beyond the arithmetic of military security to fundamental notions of the survivability of our environment, our economies, and our populations - has served to remind us all that any use of nuclear weapons comes at a cost none of us should be prepared to pay."<sup>61</sup> Reinforcing this message at the Second Conference in Nayarit, February 2014, the Ambassador stated 'our meeting here has helped to underline the terrible risk that nuclear weapons continue to pose for us all. This is not a risk that we should force our societies to face. It is a risk that we must act to eliminate.'<sup>62</sup>

In recognition of the role Aotearoa New Zealand played in helping to build the political will necessary for the TPNW negotiations to take place, Ambassador Higgie was elected by participating member states as Vice-President of the negotiating conference.<sup>63</sup> In Aotearoa New Zealand's opening statement, the Ambassador noted that 'New Zealand brings to this negotiation our long and proud history as a strong supporter of nuclear disarmament, as a

<sup>55</sup> UN General Assembly. (1975) 'Establishment of a Nuclear-Weapon-Free Zone in the South Pacific' A/RES/3477(XXX).

<sup>56</sup> New Zealand History. 'Nuclear-free legislation.' *Nuclear-free New Zealand*. <<https://nzhistory.govt.nz/politics/nuclear-free-new-zealand/nuclear-free-zone/>>.

<sup>57</sup> Foundation for Peace Studies Aotearoa. 'History'. *Aotearoa/New Zealand 30 Years Nuclear Free*. <<http://www.nuclearfreenz30.org.nz/history/>>.

<sup>58</sup> Council of Delegates of the International Red Cross and Red Crescent Movement. (2011) 'Resolution 1: Working towards the elimination of nuclear weapons.' <<https://www.icrc.org/eng/resources/documents/resolution/council-delegates-resolution-1-2011.htm>>.

<sup>59</sup> ICAN. 'Partner Organizations.' <[www.icanw.org/campaign/partner-organizations/](http://www.icanw.org/campaign/partner-organizations/)>.

<sup>60</sup> Scoop Media. (9 May 2017) 'Nuclear weapons ban negotiations.' <[www.scoop.co.nz/stories/PO1705/S00112/nuclear-weapons-ban-negotiations.htm](http://www.scoop.co.nz/stories/PO1705/S00112/nuclear-weapons-ban-negotiations.htm)>.

<sup>61</sup> New Zealand. (March 2013) 'Final Session Statement.' Conference on the Humanitarian Impact of Nuclear Weapons. Oslo. <[www.reachingcriticalwill.org/images/documents/Disarmament-fora/oslo-2013/statements/NewZealand.pdf](http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/oslo-2013/statements/NewZealand.pdf)>.

<sup>62</sup> New Zealand. (13-14 February 2014). 'Final Statement.' Second Conference on the Humanitarian Impact of Nuclear Weapons. Nayarit, Mexico. <[www.reachingcriticalwill.org/images/documents/Disarmament-fora/nayarit-2014/statements/NewZealand.pdf](http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/nayarit-2014/statements/NewZealand.pdf)>.

<sup>63</sup> Scoop Media. (9 May 2017) 'Nuclear weapons ban negotiations.' <[www.scoop.co.nz/stories/PO1705/S00112/nuclear-weapons-ban-negotiations.htm](http://www.scoop.co.nz/stories/PO1705/S00112/nuclear-weapons-ban-negotiations.htm)>.

member of our regional Nuclear Weapon Free Zone (the 1985 Treaty of Rarotonga), and on the basis of our guiding domestic legislation – the New Zealand Nuclear Free Zone, Disarmament and Arms Control Act, 1987.<sup>64</sup> She commented that the delegates gathered at the conference were ‘focused on the humanitarian impact of the weapon we wish to proscribe’.<sup>65</sup>

In Aotearoa New Zealand’s statement during the General Debate of the 2017 General Assembly’s First Committee, Ambassador Higgie described the impetus for the TPNW as ‘the desire to make *some* contribution to safeguarding humanity – in recognition of the dire humanitarian consequences of any use of nuclear weapons and to affirm the value and standards of International Humanitarian Law...’.<sup>66</sup> During the nuclear weapon thematic debate, Aotearoa New Zealand called the TPNW ‘historic’, congratulated civil society for its work in bringing about the treaty, and addressed some of the criticisms that had been made of the treaty.<sup>67</sup>

Following the September 2017 general election, a new Labour-led government took power in October 2017. Prime Minister Jacinda Ardern used her first major foreign policy address to announce the re-establishment of a ministerial position for disarmament (a role that was disestablished by the previous government in 2011). The position would be carried out by Deputy Prime Minister and Minister of Foreign Affairs, Winston Peters. The Prime Minister stated that the new portfolio was ‘an acknowledgment of the emphasis this government places

on our long held anti-nuclear stance, and the role we must play now and in the future.’<sup>68</sup> Aotearoa New Zealand continues to focus its development aid programs on Pacific nations, including those affected by nuclear weapons tests such as Kiribati and Fiji, as well as downwind countries like Samoa, Cook Islands, Niue and Tokelau.<sup>69</sup>

While Aotearoa New Zealand has maintained a consistent anti-nuclear stance in its foreign policy, Aotearoa New Zealand nuclear weapon test veterans have had to fight hard domestically to have the impact of their nuclear weapon exposure properly recognized. Public debate on the issue was first sparked in 1987, when an Auckland-based member of the International Physicians for the Prevention of Nuclear War started inquiring into the health of Aotearoa New Zealand Christmas Island veterans.<sup>70</sup> The government responded by commissioning a New Zealand Defence Force report into the involvement of the Royal New Zealand Navy in the 1957-1958 British nuclear testing programs,<sup>71</sup> as well as the above-mentioned 1990 Pearce study (which found elevated level of leukaemia amongst the veterans).<sup>72</sup> Many veterans, however, considered that these government responses downplayed the tests’ health impacts and were too limited in the health conditions attributed to radiation exposure.<sup>73</sup>

In 1995, *Operation Grapple* test veteran Roy Sefton founded the New Zealand Nuclear Test Veterans Association (NZNTVA), together with his wife and Christmas Island veteran Tere Tahi.<sup>74</sup> The initial driving aim of the

<sup>64</sup> New Zealand. (28 March 2017). ‘Statement: General Debate.’ UN Conference to Negotiate a Nuclear Prohibition Treaty. <[www.reachingcriticalwill.org/images/documents/Disarmament-fora/nuclear-weapon-ban/statements/28March\\_NZ.pdf](http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/nuclear-weapon-ban/statements/28March_NZ.pdf)>.

<sup>65</sup> New Zealand. (28 March 2017). ‘Statement: General Debate.’ UN Conference to Negotiate a Nuclear Prohibition Treaty. <[www.reachingcriticalwill.org/images/documents/Disarmament-fora/nuclear-weapon-ban/statements/28March\\_NZ.pdf](http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/nuclear-weapon-ban/statements/28March_NZ.pdf)>.

<sup>66</sup> New Zealand. (6 October 2017). ‘Statement: General Debate.’ UNGA72 First Committee. <[www.reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com17/statements/6Oct\\_NewZealand.pdf](http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com17/statements/6Oct_NewZealand.pdf)>.

<sup>67</sup> New Zealand. (13 October 2017). ‘Statement: Nuclear Weapons.’ UNGA72 First Committee. <[www.reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com17/statements/13Oct\\_NZ.pdf](http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com17/statements/13Oct_NZ.pdf)>.

<sup>68</sup> Reuters. (26 February 2018). ‘New Zealand prime minister creates new cabinet post for disarmament.’ <<https://uk.reuters.com/article/uk-newzealand-politics-nuclear/new-zealand-prime-minister-creates-new-cabinet-post-for-disarmament-idUKKCN1GA2UO>>.

<sup>69</sup> New Zealand Foreign Affairs and Trade. ‘Our aid partnerships in the Pacific.’ *Aid and development*. <[www.mfat.govt.nz/en/aid-and-development/our-work-in-the-pacific/](http://www.mfat.govt.nz/en/aid-and-development/our-work-in-the-pacific/)>.

<sup>70</sup> Dominion. (21 July 1987) ‘H-Bomb witnesses sought’; Evening Post. (1 August 1987) ‘Sailor rubbishes Navy’s claim of bomb test checks’; Evening Post. (20 August 1987) ‘Cancer check on Kiwi sailors at nuclear tests’; Nic Maclellan. (2017) *Grappling with the Bomb: Britain’s Pacific H-Bomb Tests*. Acton, ANU Press. p. 35 fn. 216.

<sup>71</sup> John Crawford. (1989) *The Involvement of the Royal New Zealand Navy in the British nuclear testing programmes of 1957 and 1958*. New Zealand Defence Force, Wellington.

<sup>72</sup> Neal Pearce et al. (1990) *Mortality and Cancer Incidence in New Zealand Participants in United Kingdom Nuclear Weapons Tests in the Pacific*. Wellington, Wellington School of Medicine.

<sup>73</sup> Nic Maclellan. (2017) *Grappling with the Bomb: Britain’s Pacific H-Bomb Tests*. Acton, ANU Press. p. 217.

<sup>74</sup> Nic Maclellan. (2017) *Grappling with the Bomb: Britain’s Pacific H-Bomb Tests*. Acton, ANU Press. p. 217.



Figure 7: Jayforce soldiers with Japanese children. Photo: Alexander Turnbull Library, PA1-q-305-0267.

Association was to secure an apology from the government.<sup>75</sup> However, when the first NZNTVA conference revealed the extent of poor health among nuclear veterans and the impact on their families, a campaign was launched to secure pensions from the government and an elevation of the pensions grading for *Operation Grapple* veterans and their widows to War and Emergency status. After several years of campaigning, the campaign achieved its objective in 1998. This meant that pension claims would be considered using more relaxed evidence requirements, and claims that were declined prior to 1998 would be reconsidered if a veteran believed his condition was related to exposure to ionising radiation. In 1999, Roy Sefton received a Queen's Service Medal for

Public Service (QSM) for his tireless work on the issue. Three years later, the veterans of Moruroa were also successful in having their pension grading changed to emergency status.<sup>76</sup>

Advocacy by the NZNTVA led to further government responses and publicly-funded studies in the following decades. These included a literature review to provide assessment guidelines (1997), an inquiry into health-status of children of Vietnam and *Operation Grapple* veterans (1999), a Family History Protocol Study on the health of veterans, their children and grandchildren (2000), and a review of available international research on the health of children of Vietnam and *Operation Grapple* veterans (2001).

<sup>75</sup> Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 217.

<sup>76</sup> New Zealand Veterans' Affairs. 'Research about New Zealand's nuclear veterans.' <<https://www.veteransaffairs.mil.nz/about-veterans-affairs/our-documents-and-publications/research/research-about-new-zealands-nuclear-veterans/>>.

As a result of the 1999 inquiry, in 2001 a program of special assistance for children of *Operation Grapple* veterans was introduced, providing for case management, family counselling, and genetic counselling for natural-born children of *Operation Grapple* veterans conceived after their parent's service.<sup>77</sup> Furthermore, the comprehensive psychological and genetic studies conducted by Dr. Rowland and his Massey University colleagues, discussed above, were supported with government funds through the War Pensions Medical Trust Fund Board and a government grant made to the NZNTVA.<sup>78</sup>

In 2007, the Ministry of Veterans' Affairs introduced lists of presumptively-accepted injuries and illnesses to help the resolution of War Disablement Pension claims. One list was for veterans who served in the Jayforce, *Operation Grapple* or at Moruroa. The illnesses that are automatically accepted as service-related include leukemia, lymphomas, multiple myeloma and 18 forms of cancer.<sup>79</sup>

Frustrations remain, however, over government action in relation to Aotearoa New Zealand nuclear test veterans. The Ministerial Advisory Group on Veterans' Health, which in 2010 reviewed the Massey University studies, recommended that the Government 'acknowledge that the nuclear test veterans were put at risk though exposure to nuclear radiation, and that [the government has] been slow to address the concerns of the veterans.'<sup>80</sup> The Minister of Veterans' Affairs, however, did not accept the recommendation and gave no such public acknowledgement. Moreover, an 'Executive Summary' of the Massey University studies released by the government in 2013 argues against the central findings of the original

research, concluding that 'the health consequence or seriousness of [the] chromosomal changes are not certain, and enhanced medical surveillance of veterans' children was not supported.'<sup>81</sup> The document, which was unsigned and had no official author, became the government's official position.<sup>82</sup> In 2017, both Roy Sefton, Chair of NZNTVA, and Dr. Rowland wrote to the Minister for Veterans' Affairs, requesting that the government reject the position of the 2013 summary and instead accept the findings of Advisory Group.<sup>83</sup> The NZNTVA also continues to push for children of nuclear test veterans to be genetically researched.<sup>84</sup>

The most recent government action was a radiological review of the Moruroa deployment commissioned by the Ministry for Veterans' Affairs and conducted by the Crown's Institute of Environmental Science and Research (ESR) in 2015. The Mururoa Nuclear Veterans Group had argued that the veterans' children and grandchildren were showing signs of inter-generational conditions they believed were linked to nuclear fallout. The veterans hoped that the review would prompt more attention to be paid to the effects of radiation on the next generations.<sup>85</sup> The report, however, concluded that those deployed to Moruroa would have had no more exposure to radiation than people in Aotearoa New Zealand, due to lower natural background-radiation levels over the oceans, and lack of exposure to other radiation sources.<sup>86</sup> The Moruroa Nuclear Veterans Group rejected the findings, pointing to numerous flaws in the ESR's methodology.<sup>87</sup>

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<sup>77</sup> New Zealand Veterans' Affairs. 'Research about New Zealand's nuclear veterans.' <<https://www.veteransaffairs.mil.nz/about-veterans-affairs/our-documents-and-publications/research/research-about-new-zealands-nuclear-veterans/>>.

<sup>78</sup> New Zealand Veterans' Affairs. 'Research about New Zealand's nuclear veterans.' <<https://www.veteransaffairs.mil.nz/about-veterans-affairs/our-documents-and-publications/research/research-about-new-zealands-nuclear-veterans/>>.

<sup>79</sup> New Zealand Veterans' Affairs. 'Conclusively presumed conditions.' <[www.veteransaffairs.mil.nz/for-clients/how-we-make-decisions/conditions-we-cover/conclusively-presumed-injuries-or-illnesses/](http://www.veteransaffairs.mil.nz/for-clients/how-we-make-decisions/conditions-we-cover/conclusively-presumed-injuries-or-illnesses/)>.

<sup>80</sup> Letter from Professor John Campbell, Chairman of the Ministerial Advisory Group on Veterans' Health, to Hon Judith Collins, Minister of Veterans' Affairs. (23 December 2010). <[www.veteransaffairs.mil.nz/assets/Research/Ministerial-Advisory-Group-on-Veterans-Health-to-Minister-of-Veterans-Affairs.pdf](http://www.veteransaffairs.mil.nz/assets/Research/Ministerial-Advisory-Group-on-Veterans-Health-to-Minister-of-Veterans-Affairs.pdf)>.

<sup>81</sup> New Zealand Veterans' Affairs. (6 May 2013). 'New Zealand nuclear test veterans: a summary of expert reviews of three studies.' <[www.veteransaffairs.mil.nz/assets/Research/NZ-nuclear-tests-veterans-a-summary-of-expert-reviews-of-three-studies.pdf](http://www.veteransaffairs.mil.nz/assets/Research/NZ-nuclear-tests-veterans-a-summary-of-expert-reviews-of-three-studies.pdf)>.

<sup>82</sup> Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 306.

<sup>83</sup> New Zealand Nuclear Test Veterans Association. (14 September 2017). <[www.facebook.com/NZNTVA/posts/1663616817002405](https://www.facebook.com/NZNTVA/posts/1663616817002405)>.

<sup>84</sup> Nic Maclellan. (2017) *Grappling with the Bomb: Britain's Pacific H-Bomb Tests*. Acton, ANU Press. p. 307.

<sup>85</sup> Tracy Neal. (30 September 2015). 'High hopes for nuclear fallout report.' *Radio New Zealand*. <[www.radionz.co.nz/news/national/285703/high-hopes-for-nuclear-fallout-report](http://www.radionz.co.nz/news/national/285703/high-hopes-for-nuclear-fallout-report)>.

<sup>86</sup> K.M. Matthews. 'The Pilaster Deployment Mururoa 1973: A radiological review.' Institute of Environmental Science and Research Institute. <[www.esr.cri.nz/assets/ABOUT-ESR-CONTENT/Text-and-PDFs/THE-PILASTER-DEPLOYMENT-FINAL.pdf](http://www.esr.cri.nz/assets/ABOUT-ESR-CONTENT/Text-and-PDFs/THE-PILASTER-DEPLOYMENT-FINAL.pdf)>.

<sup>87</sup> Scoop Independent News. (25 July 2016). 'Mururoa Nuclear Veterans Group Reply to Radiation Report.' <[www.scoop.co.nz/stories/PO1607/S00280/mururoa-nuclear-veterans-group-reply-to-radiation-report.htm](http://www.scoop.co.nz/stories/PO1607/S00280/mururoa-nuclear-veterans-group-reply-to-radiation-report.htm)>.

## Recommended Action

Given the ongoing humanitarian, human rights and environmental concerns resulting from the British, American and French nuclear tests, Aotearoa New Zealand should:

- 1) *Encourage states to sign and **RATIFY** the Treaty on the Prohibition of Nuclear Weapons and other relevant international instruments:*
  - a. Aotearoa New Zealand, and regional institutions such as the Pacific Island Forum, should promote regional accession to the TPNW, such as through the development of model ratification legislation.
  - b. Civil society, faith institutions and parliamentarians in Aotearoa New Zealand should pressure their government to bring nuclear disarmament policy into closer alignment with the norms in the TPNW.
  - c. Aotearoa New Zealand should continue to work toward entry into force of the Comprehensive Test Ban Treaty (CTBT) to reassure Pacific peoples that it will not resume nuclear testing.
- 2) *Assess and **RESPOND** to the multigenerational humanitarian needs of survivors:*
  - a. Aotearoa New Zealand should comprehensively assess, monitor and respond to the multigenerational humanitarian needs of survivors of nuclear weapon use and testing, without discrimination.
  - b. Victim assistance should include, but not be limited to: healthcare provision, psycho-social support, socio-economic inclusion, support for victim's advocacy associations, risk education.
  - c. Assistance should especially targeted to underserved communities.
  - d. Government agencies, multilateral organizations, the Red Cross and Red Crescent Movement, religious organizations, civil society and academic institutions should provide international cooperation and assistance to help affected states to provide victim assistance.
  - e. Regional institutions such as the Pacific Island Forum and Pacific Islands Development Forum should promote regional approaches to assisting victims of nuclear testing.
- f. The governments that participated in nuclear weapons use and testing, including Aotearoa New Zealand, should acknowledge their special responsibility to support victim assistance in nuclear-affected countries.
- 3) *Survey and **REMEDiate** contaminated environments:*
  - a. Government agencies, multilateral organizations, civil society and academic institutions should provide international cooperation and assistance to help countries affected by nuclear weapon use and testing – such as Kiribati, the Marshall Islands, and Samoa – survey and remediate contaminated environments.
  - b. Regional institutions such as the Pacific Island Forum, Pacific Islands Development Forum and Pacific Regional Environment Programme should promote regional approaches to assessing and remediating environments affected by nuclear testing.
  - c. The governments that participated in nuclear weapons use and testing, including Aotearoa New Zealand, should acknowledge their special responsibility to support environmental remediation.
- 4) ***RESPECT**, protect, and fulfill the human rights of nuclear test survivors:*
  - a. Aotearoa New Zealand should implement 'effective remedy' of the harm to the human rights of victim of the nuclear tests, through measures including, but not limited to, investigation, opening of archives, provision of information, acknowledgement, apology, memorialization, commemoration, paying tribute to victims, assistance to victims, guarantee of non-repetition and reparation.<sup>88</sup> Special attention should be paid to the relevance of the rights of indigenous people, including indigenous practices of

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<sup>88</sup> For a summary of international norms on 'effective remedy', see: UN General Assembly. (2005) 'Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law.' A/RES/60/147. <[http://legal.un.org/avl/pdf/ha/ga\\_60-147/ga\\_60-147\\_ph\\_e.pdf](http://legal.un.org/avl/pdf/ha/ga_60-147/ga_60-147_ph_e.pdf)>.



- remedy.<sup>89</sup> Care should be taken to ensure non-discrimination in access to victim assistance.
- b. States should question Aotearoa New Zealand on their measures to guarantee the human rights of nuclear test victims during Universal Periodic Reviews in the UN Human Rights Council.
  - c. Government agencies, multilateral organizations, the Red Cross and Red Crescent Movement, academic institutions, religious organizations and civil society should provide international cooperation and assistance to help guarantee the human rights of nuclear test survivors. This should include support for the human rights advocacy of survivor and test veteran associations, as well as nuclear disarmament networks like ICAN
  - d. Regional institutions such as the Pacific Island Forum and Pacific Islands Development Forum should promote regional approaches to guaranteeing the rights of victims of nuclear testing.
  - e. The governments that participated in nuclear weapons use and testing, including Aotearoa New Zealand, should acknowledge their special responsibility to remedy the human rights harm caused by the nuclear weapons.
- 5) **RETELL** *the stories of the humanitarian and environmental impact of the tests:*
- a. Aotearoa New Zealand should open independent official inquiries to investigate the humanitarian, human rights and environmental harm caused by nuclear weapons use and testing. They should declassify and make publically available archives and official documentation related to the testing programs.
  - b. Aotearoa New Zealand should support mechanisms of radiation risk education, particularly in affected communities.
  - c. Academia, journalists, civil society and survivors' associations should record and disseminate the testimony of victims of nuclear weapons use and testing. They should facilitate the participation of survivors in global nuclear disarmament policymaking.
  - d. Government agencies, multilateral organizations, the Red Cross and Red Crescent Movement, academic institutions, news media, religious organizations and civil society should provide international cooperation and assistance for disarmament education and radiation risk education, particularly to amplify survivors' voices.
  - e. Regional institutions such as the Pacific Island Forum should promote regional approaches to disarmament education and radiation risk education.
  - f. The governments that participated in nuclear weapons use and testing, including Aotearoa New Zealand, should acknowledge their special responsibility to amplify the voices of survivors of nuclear weapon use and testing.

## Further Reading

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