

The Long Road for Justice and Recognition: British Nuclear Tests, Compensation Schemes and Remaining Issues in Australia and New Zealand¹

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1. Introduction

During the early cold war period, the UK conducted a series of nuclear weapons tests in Oceania. From 1952 to 1963, 14 atomic bombs and seven hydrogen bombs were detonated in five locations (see Table 1) in Australia and the Pacific. In addition, over 500 so-called “minor trials” (subcritical or assessment tests not involving fissile reactions) of nuclear warhead materials were also conducted in the South Australian test sites². In these UK nuclear tests, large numbers of military servicemen, civilians attached to the military, government officials, policemen, engineers, mechanics and various types of contractors were mobilised from UK, Australia and New Zealand³. This article provides a brief review of the plight of the test victims, distinctive features of their social movement and legal actions, and the type and extent of compensation attained so far. Some remaining issues will also be identified.

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² These minor trials took the form of non-fissile explosions and/or high-temperature burning and were carried out in four different series of experiments (code-named Operations Kittens, Tims, Rats and Vixens, respectively, as shown in Table 1) with different aims of the tests, different nuclear materials involved and different natures and extents of radioactive contamination resulting. Generally, the minor trials caused surface radioactive contamination worse than fission explosions. Operation Vixens, in which plutonium alloys were destroyed by non-nuclear explosions in various conditions, caused extremely serious contamination, leaving the test sites still off-limit areas even after repeated clean-up work (Hosokawa 2010).

³ Around 100 soldiers and officers were also mobilised from Fiji, then a British colony (Robbins 1991, 136; Maclellan 2017, 125–150). It is noteworthy that a small number of Fijian veterans participated as plaintiffs of the legal action filed by UK and NZ nuclear test veterans demanding the UK Ministry of Defence to compensate, but the case failed in 2012.

TABLE: List of the atmospheric nuclear blasts with ANZ and Fiji personnel mobilisation
(All except the Mururoa tests (1973) were conducted under the British military command.)

Aus	NZ	Fiji	year	location	type & number of blasts	code name
N,F	F	—	1952	Montebello Islands, WA	(A-bomb x1)	Op. Hurricane
A,F	—	—	1953	Emu Field, SA	(A-bomb x2)	Op. Totem
A	?	—	1953	Emu Field, SA	(<i>minor</i> x5)	Op. Kittens
A	A,N,F	—	1955-58	Maralinga, SA	(<i>minor</i> x485)	Op. Kittens, Tims, Rats
N,F	F	—	1956	Montebello Islands, WA	(A-bomb x2)	Op. Mosaic
A,F	A,N,F	—	1956	Maralinga, SA	(A-bomb x4)	Op. Buffalo (One Tree, Marcoo, Kite, Breakaway)
N,F	N	A	1957	Malden Island, NLIs	(A-bomb x3)	Op. Grapple
A,F	A,N,F	—	1957	Maralinga, SA	(A-bomb x3)	Op. Antler (Tadje, Biak, Taranaki)
F	N,F	A	1957-58	Christmas Island, NLIs	(A-bomb x2, H-bomb x4)	Op. Grapple
A	—	—	1959-63	Maralinga, SA	(<i>minor</i> x47)	Op. Vixens
—	N	—	1973	Mururoa Atoll (counter operation to French tests)		Op. Pilaster

N navy; A army; F air force

WA = Western Australia, SA = South Australia, NLIs = Northern Line Islands

minor (= minor trials): various experimentation of non-fissile blasts with atomic warhead materials

The tonnage of the fissile blasts ranged from 1 to 60kt for the A-bombs (median =15kt: 24kt and 25kt in the Christmas Island tests) and from 0.3 to 3Mt for H-bombs (median = 0.8Mt).

Note that these tests listed above were carried out contemporarily with the 1946-58 nuclear tests in the Marshall Islands, 1951-57 Nevada tests involving atomic soldiers exercises, and the 1952 first US H-bomb test followed by the 1955 first Soviet H-bomb test.

Table compiled by K. Hosokawa based on Arnold and Smith (2006), Maclellan (2017), McClelland (1985) and Wynd (2009).

2. Victims of nuclear tests in Australia and New Zealand (ANZ)

2.1 Veterans, attached civilians and clean-up workers

The UK forces sent a total of 21,357 soldiers and officers to the nuclear test grounds and waters in Oceania. Australia mobilised 8,116 servicemen (3,268 in Navy, 1,657 in Army, and 3,201 in Air Force), New Zealand sent 578 Navy personnel and several dozens from its Army and Air Force. In addition, approximately 8,600 Australian civil servants, other employees and contractors, such as drivers, mechanics and clean-up workers, took part in the operations conducted in and around the Australian test sites⁴. Some four thousand (approximately 1,500 in the UK, 2,000 in Australia, and 250 in New Zealand) are alive. So far over 1,500 people (approximately 1,000 in UK, 320 in Australia, and 200 in NZ) have joined in social actions asking for recognition, compensation and medical support (Walker 2014; Wynd 2009)⁵.

⁴ The UK personnel figure is based on NWTPS database of the UK Ministry of Defence (see 4.2). The NZ naval figure is based on National Museum of the Royal New Zealand Navy, Devonport. The Australian figures are based on Yeend (2010).

⁵ There are also approximately 1,400 NZ naval servicemen who were sent aboard two frigates to

Due mainly to military duty of confidentiality, claims of health problems were relatively few before the 1970s (Walker 2014). Later, nuclear tests veterans (hereafter: NTVs) in UK, Australia and New Zealand were gradually organised into national associations. Surveys by these associations shed light on the increasing cases of health problems suffered by NTVs in the three countries. Typically occurring diseases are: cataract, chronic fatigue syndrome, diabetes, variety of solid cancer, leukaemia, lymphoma, osteosarcoma, myeloma, chronic skin disorders, arthritis, hearing disorders, circulatory diseases, and PTSD. It was also realised that cases of miscarriage, stillbirth, delivery abnormalities, perinatal mortality, infant mortality, congenital defects (Down's syndrome in particular), thyroid diseases and respiratory diseases showed significant increases among children and grandchildren of British NTVs (Busby and Escande de Messieres 2014).

As for the test site clean-up workers, multiple subcontracting practice made it difficult for them to organise, and thus extensive information regarding their health problems is not available, but there have been cases in which workers were compensated for thyroid diseases, chronic fatigue or a solid cancer.

2.2 Indigenous peoples

There were no residents on the Monte Bello Islands off the coast of Western Australia at the time of the first series of British atomic tests there (1952, 1956). However, the radioactive fallout extended to the mainland and thus the local population of several thousand, mostly Indigenous peoples, in the remote northwest region of Western Australia were presumably exposed to radiation, internally and/or externally. No health survey was conducted.

In South Australia, the indigenous population was forced to relocate from around the Maralinga and Emu Fields areas where the nuclear test grounds were constructed (Hosokawa 2003). The test sites had a combined extension of approximately 200km², but the off-limit zones surrounding the sites extended up to 3,000km². The previously nomadic Aboriginal groups in the region had been sedentarised by government enforcement. They were divided and enclosed in a number of Christian “missions” (i.e., isolated settlements administered by Christian missionaries). Then, the mission residents were given an abrupt notice that the mission was closed and they had to relocate; they were packed onto lorries and coaches. Some were moved away to other missions, but many others were thrown out in makeshift camp sites without housing or water supply (Yalata and Oak Valley 2009).

Mururoa waters, southeast of Tahiti, in official protest (Operation Pilaster) to the French nuclear tests there in 1973. The NZ ships distantly witnessed the French atmospheric tests and there are NZ veterans who claim health hazards caused by this mission.

Some 200 residents were moved on freight trains towards Western Australia (see 3.2). Some 500 were moved south to Yalata area near the coast of South Australia (see 3.1), and a few other groups were sent to Ernabella Mission and a few other missions in the northwest of South Australia.

Presumably, there were over 100 Aboriginals who were not removed; they were left somewhere close to the test grounds as they happened to be absent out in the bush for hunting and foraging. Government officials believed nobody was near the ground zero and thus no residents were exposed to high radiation. There are, however, a number of testimonies in detail that describe “black mist” in the downwind areas. Those stories by various victims are fairly consistent in terms of locations and time and thus should be considered credible accounts of what happened (Palmer 1990, O’Shea 1991, Yalata & Oak Valley 2009). Claimed health damage includes diarrhoea, skin sores, blindness, variety of cancers, and so on, although only a few of the health claims have so far been officially recognised as caused by the atomic tests: only four cases in 1984 (McClelland 1985) and only 29 in 2013 (Shepherd 2013).

As we see later, those who were relocated south towards Yalata region will eventually have their land returned and receive official support to their homeland movement (see 3.1). By contrast, little support and compensation have been offered to those relocated to Western Australia (see 3.2).

The UK wanted to test H-bombs at Australian test sites in 1952, but Robert Menzies, the Australian prime minister, who had accepted the A-bomb tests, refused this H-bomb tests proposal. Then, the UK approached the New Zealand government about the possibility of conducting H-bomb tests in the Kermadec Islands, which were under New Zealand administration; however, they were refused, too⁶. This made the UK to choose the then British colony of Northern Line Islands (NLI), the eastern part of what is now the Republic of Kiribati. The tests, code-named Operation Grapple (see Table 1), were conducted on Malden Island (1957) and Christmas Island (1957–58). The islanders were temporarily evacuated and the residents in neighbouring islands were also restricted in their movement and suffered the risk of radioactive fallout of the nuclear explosions. There has been no compensation. Medical follow-up was scanty (Robbins 1991).

As no nuclear tests have been conducted on the land of New Zealand itself, the indigenous Māori communities did not have their lands and waters contaminated or expropriated by the nuclear tests. There were a small number of Māori servicemen aboard the naval ships that took part in the nuclear tests in Malden and Christmas Islands. They

⁶ This account was provided by Michael Wynd of the Royal New Zealand Navy Museum (interview in February 2019).

are duly recognised as NTVs and provided special military pensions accordingly without discrimination (see 2.1).

2.3 Downwinders

Livestock surveys and filter paper monitorings confirmed that the radioactive fallout had reached a totally unexpected distance of several hundred kilometres from Maralinga (McClelland 1985), but no systematic research followed on its human and animal health impacts. Ceduna, Coober Pedy and several other South Australian towns within a 300km radius to the east and south of (i.e., the downwind directions from) the Maralinga test fields are known for a score of thyroid diseases, various cancers and sterility. Again, however, systematic and comprehensive research is yet to be done. It is recalled that Sue Coleman-Haseldine, an Indigenous Kukatha woman and an Australian ICAN member who contributed much to the adoption of the Treaty on the Prohibition of Nuclear Weapons (TPNW) at the United Nations in 2017, referred to Ceduna where she lives as the “Cancer capital of Australia” in her Nobel laureate speech in Oslo (Coleman-Haseldine 2017). The town is 250km to the southeast of Maralinga and contains many residents who had worked in the radioactive clean-up operations in the test sites. It should not be surprising that both downwind exposure and occupational exposure are related to the multitude of cancers in the region.

3. NTVs movements and acquired compensation schemes

3.1 Organisation of the NTVs

In 1972, the Australian Nuclear Veterans Association (ANVA) was established and the NTVs built up their activities. They shared their experiences of the atomic test missions and the sufferings afterwards, started a health survey, and investigated the pension status of NTVs. With the growing support from trade unions, environmental groups, Christian organisations and politicians, the NTVs addressed the federal government with requests for compensation (Walker 2014). Their struggle attracted major media attention in 1980s, and Australian society became aware of the issue. Then the Australian Labor Party came into power. The Hawke administration appointed a Royal Commission to look into this issue in 1984, and the Commission’s report provided, in an unprecedented level of detail, an account of the British atomic tests in Australia and their environmental, medical and sociocultural impacts (McClelland 1985). The report revealed that the radiation exposures of the soldiers and workers and radioactive contamination on the ground highly exceeded

originally planned levels. The commission recommended that the UK government should pay the cost of clean up, decontaminated land should be returned to the traditional landowners (Aborigines), and the soldiers and workers should be compensated for their health damage. The McClelland report, however, did not make clear the liabilities of the Australian government. After the Royal Commission's findings and recommendations, the Australian NTVs' actions focused on demanding the UK government for redress, while asking the Australian government for upgraded military pensions with additional medical benefits (see 2.2).

In New Zealand, formation of NTV action groups is relatively recent. The New Zealand Nuclear Test Veterans Association (NZNTVA) was created in 1996. They negotiated steadily with the Veterans Affairs Ministry and have attained substantial upgrading of their soldier's pension (see 2.2). The NZNTVA also seeks legal action in the UK. The New Zealand government is basically supportive of their NTVs' intension of possible legal actions against the UK government, but prospects for specific moves are rather gloomy, given the repeated failures of the legal challenges made by British NTVs so far (see 2.4).

NTVs in New Zealand have also made notable achievements in medical research. By proactively cooperating with genetics and molecular biology experts, NZNTVA has accumulated valuable findings about the genetic changes and traits observed in radiation-exposed veterans (see 4.2).

Although there was once close communication and cooperation between the NTVs counterparts in the UK and ANZ, recently their relationships seem to be weakening. Aging of the NTVs makes it harder, year after year, to keep unity and energy in action. Surviving NTVs in New Zealand maintain a relatively strong unity, presumably because of the sailors' spirit: the overwhelming majority of the NZNTVA members were aboard one of two frigates when they were sent to the nuclear test waters (Wynd 2009). The race relations between Māori and Pakeha NTVs seem to have been non-discriminatory⁷. In Australia, by contrast, the NTVs belonged to army (majority), navy or air forces; and are now dispersed in various parts of the big country. After the successive passing of a few key organisers who had been central to the ANVA's activities in the 1970s to 80s, the association went dormant. A new association of NTVs was formed in 1985 and functions as an amity network⁸, but its role as a social movement entity seems limited.

In New Zealand, the Indigenous members were the same NTVs with no contamination and relocation caused at home by the nuclear tests in the Pacific. By contrast, Australian

⁷ My evaluation on this is based on interviews with Denise Baynham of the Auckland War Memorial Museum (February 2019), who did extensive hearings with NTVs, and with Roy Sefton, chairman of the NZNTVA (March 2019).

⁸ The Australian ex-Services Atomic Survivors Association.

Indigenous stakeholders of the nuclear tests issues are not military servicemen but displaced landowners who had to fight for their traditional land rights. Thus the Australian NTVs, mostly of European descent, and the relocated Aborigines did not share the purposes, strategies and legal tools for their struggles. Mutual respect and sympathy exist to a certain extent, but collaborations on specific actions have been scarce.

3.2 Upgrading military pensions

As a general rule, pensions for military services differ, not only according to the length of the service but also according to where and when they served. The amount of soldier's pension is upgraded depending on whether they are assigned to a dangerous area or to a dangerous mission, whether it was wartime or a peace period, whether there was an actual engagement and whether the soldier was wounded. This grading system also determines the amount of widow's pension.

NTVs argued that participation in nuclear testing is a dangerous mission and that operations such as flying through the mushroom cloud to take air samples or navigating through the waters under the mushroom cloud immediately after detonation should be regarded as actual engagement. Thus they claimed their military pensions should be upgraded accordingly. Another important demand was about the medical judgement. NTVs insisted that if they suffer from the kind of diseases that are known to have presumable correlations with radiation exposure, then the patients should qualify, without further proof, for war disabled pension (WDP). This is a method adopted by the USA in its 1990 Radiation Exposure Compensation Act (RECA) and the list of such diseases are called the "presumptive list".

The governments of the UK and ANZ successively gave in to the NTVs' persuasion and have basically agreed to the rationality and justice of these upgrading requests, although detailed entitlement rules and procedures vary in each state. In 2007, New Zealand decided to apply retrospectively the presumptive list of diseases to judge accreditation of war disability pension (WDP). The current list, as modified in September 2018, includes the following diseases⁹: all forms of leukaemia (except for chronic lymphocytic leukaemia), lymphomas other than Hodgkin's disease, multiple myeloma, primary liver cancer (except if cirrhosis or hepatitis B is indicated), and solid cancer of the bile ducts, brain, breast, bone, colon, lung, bronchioloalveolar carcinoma gall bladder, oesophagus, ovary, pancreas, pharynx, salivary gland, small intestine, stomach, thyroid, and urinary tract (renal, ureter, urinary bladder, or urethra). The diseases in this list are

⁹ Veterans' Affairs New Zealand (VANZ), Conclusively presumed conditions. 7 September 2018.

accepted as nuclear test service-related by which the NTVs are automatically qualified to WDP.

In 1986, the Australian government accepted some of the recommendations of the 1985 Royal Commission report and amended the Veterans' Entitlement Act (VEA), and medical allowances was added to NTVs' pension. A new scheme was introduced so that NTVs may apply for entitlement to free medical treatment, or the so-called "Gold Card." In 2006, the Australian Participants in British Nuclear Tests (Treatment) Bill was brought to discussion (Yeend and Biggs 2006)¹⁰. The Australian government has been reluctant to cover the non-military participants in nuclear tests under VEA, which by principle deals with soldiers who served in a war. The 2006 legislation made it possible for the civilian employees of the federal government and subcontracting workers who had participated in the nuclear-test-related operations to apply for more or less equivalent medical allowances to those for military servicemen, such as free cancer screening and treatment, including the cost of travel for treatment¹¹.

The change, however, was not defined as recognition and compensation for the damage caused by the atomic tests. The Howard administration at the time insisted that there was no link between the increase in cancer rates among the nuclear test participants and exposure to radiation.

The UK government's response was a bit delayed, but it was decided in 2013 that war disability pension (WDP) should be applied automatically to the NTVs.

Veterans Affairs New Zealand (VANZ), the ministerial agency in charge of veterans affairs including pension qualifications, has a Specific Claims Panel to respond to the objections made by veterans or the bereaved as to specific grade decisions on military pensions. The panel includes by rule a representative of the Royal New Zealand Returned and Services' Association (RSA), and when the case to be discussed is a claim from a nuclear veteran (or the family), a representative of NZNTVA should be present as on the panel as well. This sort of representation has not yet been institutionalised either in the UK or in Australia.

There is a provision common to UK and ANZ military pension systems that spouses or partners of the veterans who served in any actual war operations, whether wounded or not, will be eligible for surviving spouse or partner pension (SSP). Most of the NTVs in New Zealand are already qualified to "war pension (emergency)", which is higher than "war pension (routine)", and thus their wives would receive SSP. In Australia, NTVs are given

¹⁰ The bill was enacted as: Australian Participants in British Nuclear Tests and British Commonwealth Occupation Force (Treatment) Act 2006.

¹¹ Additionally, in 2008, free cancer screening and treatment were guaranteed to the police officers who had patrolled the closed test sites (Yeend 2010).

“non-warlike hazardous service” qualification, which is one rank below the war pension and their spouse’s eligibility for widow’s pension is to be decided on a case-by-case basis (Yeend 2010).

3.3 Counter operations against the French tests

In 1973, the NZ government, with its strong opposition to the atmospheric tests France had declared it would conduct in Polynesia, decided to send naval frigates to the test waters around the Mururoa Atoll, some 1,000km southwest of Tahiti. The crew were told about the exposure risks in advance, and were allowed to get off the mission if they want (Wynd 2009). The mission was code-named Operation Pilaster. France exploded the H-bombs in despite of the international criticism and the unusual confrontation by the NZ navy. The NZ ships were actually more than 20 nautical miles away from ground zero, and the film badges worn by the crew recorded only the normal background levels of radiation. Some of the servicemen, however, claim bad health conditions and/or PTSD in later years. Although the navy and the government do not admit that there was any significant radiation exposure, the Veterans’ Affairs ministry rewarded the participants of the Operation Pilaster with the “war pension (emergency)” qualification. They were also awarded “New Zealand Special Service Medal (nuclear testing)” in 2002, together with the Operation Grapple (British tests) veterans.

The NZNTVA welcomes membership of the French test veterans and shares the honour of the medallic recognition, although the association’s main effort is to assist British test veterans’ activities to tackle their plight¹².

3.4 Compensation claims to the UK government

Following the Royal Commission’s recommendations (1985), the Australian government demanded compensation from the UK government, but the UK rejected the demand after intensive negotiations through 1986 to 1987 (These negotiations and the displeasing result were kept secret until the official documents were disclosed in 2014). Further negotiations finally made the UK agree in 1993 to pay 20m pounds (45.25m Australian dollars) *ex gratia* for the cost of additional clean up of the sites. The UK insisted the payment was not redress against the human damage. The Australian government allotted the fund for clean-up operations and compensation to Indigenous communities forced to relocate (see 3.1). The UK money was not distributed to the NTVs.

¹² Roy Sefton, chairman of the NZNTVA (interviewed in March 2019).

The ANZ governments are reluctant to make any legal action against the UK government, at either a state or international court, to settle the matter; they only show a seemingly positive attitude to support the NTVs move to prepare for litigations.

All the compensation claims made by British NTVs against the UK Ministry of Defence (MOD) since the 1990s have failed because the courts did not find specific causal relation between the diseases and the radiation dose (Walker 2014). A particularly important case was the test trial filed in 2014 for possible class-action procedures, because a successful ruling would have triggered a huge class action carefully prepared by around 1,000 NTVs in Britain together with several hundred NTVs from ANZ also in preparation for class action in the UK. The court approved 10 test trials to commence in 2009. To the deep disappointment of the NTVs and their supporters, however, the test cases were rejected in 2012, narrowly by 4:3, at the Supreme Court in London. The court ruled that too much time had passed since the nuclear tests to prove the cause of the health damage.

In 2013, NTVs in Australia lodged a complaint with the Australian Human Rights Commission. They claimed that the Menzies Government violated their human rights by exposing them without consent to harmful radiation from the nuclear tests in Maralinga. They argued that it was a violation of the Universal Declaration of Human Rights that the records of the test participants' exposure doses were kept undisclosed. The Commission, however, turned down the case, stating that it does not have the jurisdiction to hear the case of NTVs exposed to radiation from the British nuclear testing (Farrell 2013).

4. Restoration of Indigenous land ownership, compensation and return to the country

4.1 South Australia

The largest group who suffered the forced relocation due to the Maralinga tests and their offspring, mostly Anangu-Pitjantjatjara-Yankunytjatjara (APY)¹³, now live in Yalata near the South Australian coast, some 150km south-southeast of Maralinga. (There are also families and individuals who moved to other South Australian towns.) The settlements

¹³ They are the First Nations people of arid inland region who speak several different dialects of the Western Desert language. The major dialects spoken are *Pitjantjatjara* and *Yankunytjatja*, which are mutually intelligible. The speakers are generally called *Anangu*, which means “human being” in these dialects (the underlined letter n stands for a retroflex nasal). The term *Anangu* refers to the Aboriginal people of the region as contrasted to the European settlers/invaders. Recently “APY” (i.e. Anangu-Pitjantjatjara-Yankunytjatjara) has become a convenient abbreviation to refer to the local Aborigines of Pitjantjatjara and Yankunytjatjara descent, also possibly covering, depending on context, neighbour groups who speak close dialects.

in Yalata were initially administered by Christian missionaries, but since 1975 the community has been autonomously managed by an all-Indigenous council.

In 1981, the state's Land Rights Act (SA) was enacted, covering a wide area of northwest, and this act was applied to a part of the Maralinga test site. The statutory Aboriginal land rights scheme provided communal title to the traditional landowners, with full rights to use and control their land, and the designated Aboriginal Lands cannot be sold off (inalienable freehold). Further in 1984, the Maralinga Tjarutja Land Rights Act (SA) was enacted, which triggered a homeland movement among the APY people in Yalata and elsewhere. As Maralinga district at the time was still heavily contaminated, people chose to set up an interim settlement at Oak Valley, approximately 400km from Yalata and 160km northwest of Maralinga, with an initial population of some 200.

The APY people of Yalata call themselves and their community *Maralinga-tjarutja*, which literally means 'from Maralinga' in Pitjantjatjara/Yankunytjatjara. This is a straightforward expression of the Yalata people's strong feeling of attachment to their original country (Hosokawa 2000). The children and grandchildren who were born in Yalata have been told the stories and songs related to the places, animals, plants, and the ancestral spirits and their sacred sites in and around Maralinga. Thus the younger generations of the nuclear test refugees inherit a strong communal sense that Maralinga is their own land of spiritual connection, their true place to return (Yalata and Oak Valley 2009). On occasion of Maralinga-Tjarutja representatives' visit to the UK Parliament in 1992, the delegates brought a small amount of contaminated Maralinga soil as a symbolic gift, which allegedly turned out to be one of the decisive factors that made the UK government finally agree with the Australian government on the UK's responsibility for compensation.

Clean-up work at the test sites resumed in 1993 and all the Maralinga site was officially returned to Indigenous ownership in 2009. However, as commented on earlier, residence in some of the areas remains restricted (Hosokawa 2010). In 1994, the federal government of Australia paid A\$13.5m to the Maralinga-Tjarutja Trust, which is a body incorporated on behalf of the Maralinga-tjarutja who are the traditional landowners as recognised by the 1984 Maralinga Tjarutja Land Rights Act). This was compensation for the forced relocation and loss of land and does not include medical screening or treatment costs.

Today, the majority of the Maralinga-tjarutja people still live in Yalata, whereas the Oak Valley population is fairly increasing. The ground-zero tourism in Maralinga for general public visitors is operated by the Maralinga-tjarutja community and brings valuable income to the community.

4.2 Western Australia

Contrary to their South Australian relatives, the groups forced to move to Western Australia had only limited support, partly due to the delay of state Aboriginal Land Rights legislation in Western Australia. In the late 1980s, some of the relocated people, mostly *Ngaanyatjara* and relatively few *Pitjantjatjara-Yankunytjatjara*, started to establish outstations in the desert region closer to the South Australian border, where they can maintain their traditional language and revive their own cultural practices. There are also others, on the other hand, who chose to shift further west to the city of Kalgoorlie-Bolder for job opportunities, mainstream education and other purposes.

5. Remaining issues

5.1 Recognition of liability and injustice

The British nuclear tests were all planned and carried out by the UK Ministry of Defence, to which the then Menzies Government of Australia gave approval without proper consultation with the parliament (McClelland 1985). Both ANZ governments agreed that their military forces would be under the command of British military officers during the test operations (Wynd 2009). Therefore, neither governments can evade responsibility because they obviously failed to provide their soldiers and civilians with prior explanation of the risks participants in the nuclear tests would bear and/or failed to properly understand those risks.

The NTVs are not simply asking for medical and financial help, but they insist on recognition. They were mobilised with poor radiological protection and ordered to engage in dangerous duties without training and without proper explanation of the risks of radiation exposure. One of the most crucial claims made by the NTVs is that all this was unfair, and thus the NTVs deserve an apology and redress.

As a matter of fact, the nuclear tests had intentional elements of human tests in that the detonations were repeated each time with different human allocations, with different clothing and protection gears, and/or with different distances from the ground zero, in different ways to approach. Are such human experiments justifiable because they took place in the midst of the “Cold War” madness of the time? This should be a fresh question to be asked in the light of preamble to the TPNW.

It is also evident that the ANZ personnel, rather than the British, were allocated to such high-exposure operations as, for instance, collecting air samples by flying through the mushroom cloud, navigating through the hypocentre waters very shortly after detonation,

searching and picking up dead birds and animals, cleaning up contaminated vehicles and machineries, and so on (Robbins 1991; Walker 2014; Maclellan 2017). It was therefore not merely a “Cold War” story, but a colonialism story of inequality as well.

5.2 Health damage and possible transgenerational hazards

Dosimeters, film badges or any other device that had recorded the amount of radiation exposures of the soldiers and workers during the atomic tests were all retrieved by the British defence administration. The recorded radiation readings are still undisclosed despite repeated requests from the veterans. This makes it practically impossible to verify individual dose-response cases. In 1983, UK Ministry of Defence (MOD) started to construct NWTPS, a database in order to track the health conditions of over 20,000 British NTVs. The main focus of NWTPS is epidemiological comparison of mortality and cancer rates of NTVs and the control group of approximately 20,000 veterans who had no involvement in the nuclear tests (Yeend 2010). Management of the NWTPS database is commissioned to the National Radiological Protection Board (NRPB). So far, reports from NRPB (1988, 1993, 2003) suggested a small probability of causal relationship between the exposure and leukemia, but denied radiation relevance in all other diseases (Yeend 2010). The Australian government also started an epidemiological study in 1999, but reported in 2006 that no significant difference of mortality and cancer rates was found between NTVs and control group (Yeend 2006).

Apart from governmental studies such as the above, important facts concerning exposed veterans’ health conditions build up in the course of NTVs’ preparation for legal actions. A report by the cytogenetic research team at Massay University (Rowland 2007), commissioned by the NZNTVA, is of particular importance: It showed, by using the mFISH assay¹⁴, that the NZ veterans of Operation Grapple (Malden and Christmas Islands tests) had chromosomal disturbances which could induce leukemia or cataracts at nearly three times the rate observed in the control group.

There is a growing tendency to focus on transgenerational analysis of health effects since a stunning epidemiological study (Busby and Escande de Messieres 2014) indicated significant increases of miscarriage, stillbirths and infant mortality among the second and third generations of British NTVs. The study also showed significant increases of cancers in the third generation. As the state database (NWTPS mentioned above) does not cover offspring of the NTVs, the British Nuclear Test Veterans Association (BNTVA) strongly urged the UK government to consider an official transgenerational investigation. In 2018,

¹⁴ “mFISH” stands for the multicolour fluorescent in situ hybridisation.

the UK Defence Minister stated that they were considering to design research in health impacts on the second generation of NTVs (Miller 2018). The ministry is also carrying out a detailed study (2018–2021) of DNA deficiencies among NTVs.

6. Common and essential claims

As we have seen in the cases of Australia and New Zealand, the Indigenous stakeholders and the NTV stakeholders have different needs and demands, thus requesting different modes of compensation. There are, however, essential claims common to the both: They call for recognition and an apology. Recognition that their human rights were forcibly violated, either in the form of forced relocation or human experiment, without any prior or proper information or consent. Apology for this violation, subsequent abandonment and belated support. Their requests for full medical care and continued health surveys, including for transgenerational impacts of radiation exposure, should be interpreted on the basis of their fair entitlement to such recognition and apology. It is also vital that both Indigenous and NTVs' voices stress the importance of carrying on their stories to the future generations. This emphasis should be understood as fundamentally common to the survivors of nuclear disasters worldwide.

As a final note, it is stressed that the New Zealand system of establishing a Specific Claims Panel, which ensures participation of NTV representatives (see 2.2), is remarkable and suggestive. This kind of official involvement of representatives from the suffering party in decision-making systems should be a significant model in forthcoming discussion, in the TPNW Meetings of States Parties and elsewhere, for establishing a universal guideline for fair compensation and support schemes for the victims of nuclear tests and other radioactive disasters.

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