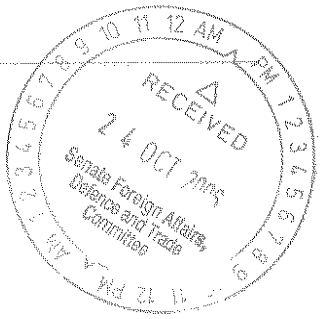
Lancsar, Angela (SEN)



From: Alan Batchelor [batcham@ozemail.com.au]
Sent: Tuesday, 24 October 2006 12:07 PM
To: FADT, Committee (SEN)
Subject: SENATE INQUIRY - NUCLEAR VETERANS' TREARMENT BILL

Dear Dr Dermody

It is requested that the e-mail repeated below (and attachments) are provided to the Senate Standing Committee on Foreign Affairs, Defence and Trade.

I have given a great deal of thought to this request. My decision to draw attention to this document was based on the fact that it provides critical point information concerning the Minister's contention that radiation levels, estimated by the Adelaide University, were inadequate to justify the significant excesses in cancers and cancer deaths identified in the Study. This being justification for the "no responsibility" basis of the Treatment Bill.

The discussion in the e-mail below is detrimental to the Minister's views and should not have been ignored. Under the circumstances, it is essential that it be part of the Committee's considerations.

On page 145 of Hansard, 11 October 2006, Mr Billson stated that he had responded to points raised by me (reply to Member for Bruce). He should be requested:

- to provide specific details of his reply to my e-mail dated 9 August 2006 (to my knowledge there has been no reply); and
- if details can't be produced, he should be asked if he has mislead Parliament in this matter.

Yours sincerely

Alan Batchelor

----- Original Message -----
From: Alan Batchelor
To: Bruce Billson (Minister)
Cc: Sue Wareham ; Paul Malone ; Dimity Hawkins ; Chris Reason ; Susanne Roff ; Lyn Allison (Senator) ; Jack Lonergan ; Alan Griffin (Shadow Min) ; Keith Horsley ; Simon Harrington (Repat)
Sent: Wednesday, August 09, 2006 3:18 PM
Subject: NUCLEAR VETERANS' HEALTH STUDY

Dear Minister

It is beyond comprehension that a Minister and his group of expert advisers have accepted that a nuclear veteran could be exposed to the same minimal radiation dose rate of 0.01 mSv/hr, whether this occurred 1 hour or 90 days after the detonation of an atomic weapon. The inability to examine the non-carcinogenic effects of ionising radiation escalates this carelessness to a higher level.

Essential research activities undertaken by the Study contain many gaping holes that have been discussed previously. One of the most important areas overlooked was the implications of missing dose records for units intimately involved in work adjacent to detonation areas. Below is a snapshot of some of the areas of involvement of one of these units. It is important to note also that much is not foreseen in a planning document prepared for a research project of this magnitude and complexity.

This document contains material relevant to comments made in the letter forwarded to yourself by Ms Susanne Roff on 4 August 2006.

BACKGROUND

In the Dosimetry comments sent to me by Dr Keith Horsley (DVA and Dosimetry sub-committee) on 14 July 2006, it states in the Post Trial comments that "Taranaki being a balloon test gave little fallout". This was undoubtedly presented as an (unbalanced) argument to demonstrate the reasonableness of accepting the validity of the Dosimetry Study's estimated dose-rates and their resemblance to background radiation. It must therefore be expected that any radioactivity present at the site would result predominately from neutron activation and the dynamics of weapon detonation. This could then be expected to result in a reasonably uniform and circular distribution of the dose-rate contours around the Ground Zero area. If practical measurements are available that demonstrate the existence of dose-rates well above the estimations of 0.01 mSv/hr, it follows that:

1. These dose-rates would be uniformally distributed around the GZ;
2. The Study's dose-rate estimates are incorrectly based; and
3. The Study has been based on an inadequate research plan.

TARANAKI DOSE-RATES

The attachment *Antler Taranaki Dose-rates.pdf* (National Archives Control Symbol R015/005) contains a table showing the effects of decay on the Taranaki dose-rates over a period of H + 1.1 hours to D + 23.7 days at ranges of 12,790, 3,390 and 90 feet. In summary these can be reduced to a radioactivity spread within the following dose-rate parameters:

Time	**Range**	**Dose-Rate**
H + 1.1 to 2.6	12,790 ft	29.24 to 19.42 r/hr
D + 1.94 to 8.69	3,390 ft	1437 to 9.3 mr/hr
D + 8.99 to 23.7	90 ft	6.8 to 2.91 mr/hr

The figures in the table can be converted approximately to mSv/hr by multiplying 1r by 10 and 1mr by 0.01. It should be noted that a veteran exposed at the earliest of times and taking into consideration the distance at which the exposure took place and period exposed, could receive very much higher exposures than those calculated by the Study that have resulted in the persistent use of 0.01 mSv/hr, no matter the range or time at which the exposure took place.

It remains to demonstrate the likelihood of early exposures and where possible the related distance and period of exposure. This is not a simple task and requires a deal of detail to put together an assessment for a small but indicative operational group. No attempt has been made to explain the inclusion of the extracts repeated below. In most cases, the relevance and inter-relationship should be obvious to the discerning reader. Note: F indicates time of detonation: D indicates day of detonation.

As much of the discussion revolves around instrument bunkers, pictures and a description is provided in the attachment *Instrument Bunkers.doc*. Less than 25% of the bunkers used during Operation Antler, were used by the following Measurement Groups.

OPERATION ANTLER SUMMARY PLAN, SECTION D - MEASUREMENT GROUPS.

The above document was always available to the study from the Australian National Archives in Canberra, and could have been requested by an officially registered reader using Control Symbol Z505.

PART 1 - RM GROUP

Page D1.2

> (Task RM1) "The object of this task is to produce a gamma dose-distance curve to provide further information ..... A variety of methods will be employed and the equipment will be distributed along the instrument lanes for all rounds. Distance from Ground Zero will vary from 400 to 15,000 ft."

Page D1.3

(Task RM.3) "The apparatus will be enclosed in an 8 foot cube steel shelter, sandbagged and partially buried. Two positions will be used per Round."

Page D1.4

(Task RM.4) "The massive collimator is mounted on a heavy trailer together with 3 ft of water shielding to reduce the neutron flux. Co-axial cables ..... lead to a steel shelter. This shelter, which contains all the electronic equipment and tape recorders, is embedded in the ground to one side of the trailer at a point opposite the door ..... The trailer will be raised on jacks in an area cleared and levelled at a nominal distance of 1,000 yds from Ground Zero ....The distance will be scaled to weapon size."

Page D1.7

"For Task RM.3 (gamma time intensity) ..... Finally the shelters will be sandbagged. Sandbagging will have to be completed 1 1/2 hrs before firing."
"For Task RM.4 (gamma flash spectrometer), closure of shielding, filling of rear water tanks and sandbagging should commence at F - 6 hours ... The team will be evacuated at F - 2 hrs."

Page D1.8

"For Task RM.3 the shelters will be visited at F + 1 hr onwards. A party will be required to remove sandbags and open up the shelters to enable records to be recovered."
"For Task RM.4 the site will need to be revisited at F + 2 hrs for an operational check and to remove an instrument rack."

Page D1.9

(Task RM.3) "Instrumentation and equipment preparation in the shelters for Round 3 will be commenced after firing Round 1 as soon as the shelter has been transferred."
"For Task RM.4 the generator, electronic equipment and steel shelter should be moved to the site for the next round by D + 1, the trailer by D + 2."

Page D1.14

"It is requested that some effort be directed to improving the road system in the fallout grid, especially in 5th Avenue in two or three places (Buffalo Yellow Area) as it will be necessary to drive round with a heavy vehicle loaded with batteries."
"The steel shelters numbered RM203 and RM204, used on Round 1 should be moved into new positions for Round 3 becoming RM209 and RM210"
"The Canadian gamma spectrometer equipment must be moved as soon as possible after each round to its new site which involves:

1. Moving the trailer and jacking it up,
2. Embedding the shelter,
3. Cabling the generator to the shelter,
4. Providing water for the shielding tanks,
5. Mounding the trailer and shelter."

Page D1.16

"12,000 gal of bore water for each round for Task RM.4."

Page D1.18

"Use of crane for shelter movement between rounds."
"Use of crane with 3 ton lorry on D + 1 for Task RM.4."

"Use of 2 men full time from A + 14 for Task RM.4."

Page D1.19

"Gas welding and cutting torches and portable gas cylinders are required permanently at RM.4 sites for mounting and demounting connexions from shelter to trailer."

PART 3 - THERMAL MEASUREMENTS GROUP

Page D3.3. The Forward sites are:

HM203 for Tadje (1200 yds)
HM206 for Buna-Buna (Taranaki) (3000 yds)

Page D3.13

"Occasional use of Task Force labour will be required."

PART 4 - NUCLEAR TRANSIENTS GROUP

Page D4.2

(Task NT.1) "The equipment is self contained and, with the exception of the scintillator, is based on a welded steel chamber, buried below ground level, to provide protection against both gamma radiation and radio flash."
"There will be four sites and at least one site will be in operation on each round. The distance of each shelter from the firing site will depend on the energy output of the weapon and the gamma attenuation but will be in the region of 2,000 metres."
"On Round 3, as an addition, a scintillation detector will be mounted on the tower, at a distance of 10 metres from the weapon. An air spaced co-axial cable will be used to connect the detector to the steel shelter 1,425 yds distant."

Page D4.3

(Task NT.2) "The equipment will be housed in steel shelters and, with the exception of the scintillator, buried below ground level to provide protection against both gamma radiation and radio flash."
"There are two sites for this task (NT23 and NT24) and either or both will be used on all rounds."

Page D4.4

"NT.1 and NT.2 shelters will have to be sandbagged and three quarters of an hour should be allowed at each shelter for this."

Page D4.5

"It will be necessary to visit NT Group sites by F + 2 hrs to recover records. De-sandbagging will be necessary to gain access to the NT1 and NT2 shelters."
"Preparations for the next round will commence 12 hours after the previous firing. A crane will be required on the next working day after firing to remove equipment from the Multiplication Rate shelters to the position for the next round."

Page D4.13

"Use of cranes will be required at NT Group sites in the test area during the preparation phase for Round 1 and also for the next working day after each round for removal and installation of racks at NT sites."

"Sandbagging parties will be required at NT shelter sites before and after firing."

PART 5 - AIR AND GROUND SHOCK GROUP

Page D5.2

(Task AG.1(b)) "The sites will be chosen in the instrument lanes in each round to cover as near as possible the estimated levels 15, 12,5, 10, 8.5, 7, 6, 4.9, 4.1, 3.4 and 2.8 psi. There will be 10 sites of equipment for each round."

Page D5.3

(Task AG.1(c)) "Two baffles will be put out to cover as near as possible the estimated levels 7, 6, 4.9, 4.1, 3.4 and 2.8 psi, i.e. six stations for each round."
(Task AG.7) "A background grid of smoke trails fired from rockets sited approximately 3,000 ft behind the burst in a place normal to the line of sight of the cameras at North base will be used."

Page D5.5

"It will be necessary to visit all sites in the instrument lanes between 7 and 12 hrs after firing to recover records and commence assessment of results."
"The use of a 3 tonner and 5 cwt crane will be essential during the recovery operations in the instrument lanes. This should be between F + 12 hrs and F + 3 days."

Page D5.6

(Task AG.1(c)) "On later rounds, where equipment has to be removed from one lane to another, the time for preparation is estimated at five days."

Page D5.10

"For each round a 60 ft side graded track is needed, running radially in a generally southerly direction, extending from 15 to 2.8 psi level."
"A track (rocket lane), normal to line North Base to Ground Zero and 3,000 ft +/- 500 ft north of Ground Zero of length 5,500 ft from line North Base to Ground Zero, is required for each site."

Page D5.11

"Engineering effort, including use of crane for one day will be required after each round to recover F.M.T. strong boxes (stewpans). This should be between F + 12 hrs and F + 3 days."

Page D5.14

"Heavy Transport and Plant. 3 tonner in conjunction with crane after each event - this should be between F + 12 hrs and F + 3 days."
"A crane will be required in conjunction with the 3 tonner (Section 13.2) for lifting equipment at F.M.T. recording sites in instrument lanes after each event."

Page D5.15

"Four men attached to the Group, one of them to be R & E Mech. The four men will be required to assist in moving stores, to be on call for the advanced servicing party and between rounds."

Many of the above tasks come with unseen penalties, e.g. the smallest crane available was a 20 ton Coles Crane that would need, besides the operator, a dogman and load positioners.

Many of the above tasks involve de-sandbagging instrument shelters before access could be provided for the recovery of records. Attached is a statement to the Royal Commission by the NCO in charge of one of these parties. The extract of his statement shown below is particularly relevant to all de-sandbagging operations:

> *"I witnessed each of the three explosions from the Roadside camp and, after each, within about half an hour, my team of twelve engineers and two landrovers proceeded as quickly as possible to debag the bunkers to allow the boffins access, so they could collect their instruments. On none of these occasions were we issued with any protective clothing whatsoever. The bulldust was so heavy that we used to wear handkerchiefs over our mouths to try to stop breathing it in. On each occasion, we de-bagged the bunkers as quickly as possible and then returned to camp and went about our normal business. I estimated that it would have taken us about three-quarters of an hour on each occasion to de-bag the bunkers. We were never checked for radiation as we left the areas.*
>
> *I don't know how close the bunkers would have been to the explosion, but I recall that, all around them, there were railroad sleepers which had been set on fire by the heat of the explosion. I estimate that they would have been no more than a mile from Ground Zero, and perhaps a lot closer."*
>
> *".....After leaving Maralinga, I volunteered to return, but was informed by the Army that I had received enough radiation during my 1957 visit and I would not be allowed to go back."*

The recovery and packing of instrumentation and related equipments used by the Measurement Group (about 68 tons) for return to the UK and Canada had to be completed by 23 October 1957 (D3 + 14) when the majority of AWRE personnel had departed (National Archives R145/075). A significant amount of this instrumentation required priority movement to the Christmas Island tests commencing on 8 November 1957 (D3 + 1 month) where it had to be unpacked, installed and made operationally ready.

CONCLUSIONS

If the work times and locations in the planning document are integrated with the dose-rates in the attached Taranaki dose-rate document, the existence of doses well in excess of those estimated by the Study for participants carrying out early re-entry functions becomes obvious.

By extension, the presence of these increased dosage levels will also apply to other Antler AWRE Groups, other supporting early re-entrants and similar involvements in other Operations.

If DVA had allowed a free interchange of information between all parties in the Study, this complete disregard of operational conditions may never have occurred.

The insistence that excesses in the incidence of radiogenic cancers (ranging from 16 to nearly 300%) "do not appear to have been caused by exposure to radiation" was so incongruous in the circumstances, that it must be deemed most likely that other errors at this level could also exist in the Study.

REDRESS FOR 50 YEARS OF INACTION

The Government has failed, over the last half century, to recognise the health consequences of participation in the UK nuclear tests. The recent Cancer and Mortality study has lacked the expert coverage needed to efficiently complete the Study. The Government now has a compelling need to rectify their lack of diligence in observing their duty of care for these veterans.

It is recommended that the present coverage provided for "all cancers" be retained and the following statement be implemented and published:

> "Based on further scientific evidence, the Commonwealth withdraws its support for the findings of the "Australian Participants in British Nuclear Tests in Australia" conducted by the University of Adelaide. Additionally, because of the lack of consideration given to the presence of beryllium, the heavy metal poison properties of uranium and the use of asbestos wool filters in the respirators used with protective clothing, it

has been decided to provide unrestricted access to all aspects of the Veterans' Entitlement Act.

We are waiting on the results of the New Zealand and British studies to make a determination on the need to investigate the health of the offspring of nuclear veterans.

The Government and the Repatriation Commission wishes to apologise to all nuclear veterans for their inefficiency and tardiness in arriving at this decision."

Yours faithfully

Major (Retd) Alan Batchelor MBE AMIET psc
50 Bendigo Street
FISHER ACT 2611

1393 DECAY RESULTS - TRINIT CENTER

DATE	TIME	H +	INTERVAL IN SEC.	RANGE	DOSERATE r/hr.
9/10/57	1706.45	1.112	24.25	12790	29.24
"	1708.22	1.139	24.50	"	28.94
"	1710.01	1.167	24.75	"	28.65
"	1711.41	1.195	25.00	"	28.36
"	1713.22	1.223	25.50	"	27.80
"	1715.04	1.251	25.50	"	27.80
"	1716.47	1.280	26.00	"	27.26
"	1718.31	1.309	26.25	"	27.01
"	1720.17	1.338	26.50	"	26.75
"	1722.04	1.368	27.25	"	26.02
"	1723.53	1.398	27.25	"	26.02
"	1725.42	1.428	27.25	"	26.02
"	1727.33	1.459	28.00	"	25.32
"	1729.25	1.490	28.00	"	25.32
"	1731.18	1.522	28.50	"	24.88
"	1733.12	1.553	28.75	"	24.66
"	1735.07	1.585	28.50	"	24.88
"	1737.02	1.617	29.00	"	24.45
"	1738.58	1.649	29.75	"	23.83
"	1740.55	1.682	29.50	"	24.03
"	1742.56	1.715	30.00	"	23.63
"	1744.55	1.749	30.25	"	23.44
"	1746.57	1.782	30.50	"	23.25
"	1748.59	1.816	30.75	"	23.06
"	1751.02	1.850	30.75	"	23.06
"	1753.08	1.885	31.50	"	22.51
"	1755.13	1.920	31.75	"	22.33
"	1757.21	1.956	32.00	"	22.16
"	1759.29	1.991	32.00	"	22.16
"	1801.38	2.027	32.50	"	21.81
"	1803.48	2.063	32.50	"	21.81
"	1805.59	2.100	33.00	"	21.48
"	1808.12	2.137	33.50	"	21.16
"	1810.27	2.174	33.75	"	21.00
"	1812.42	2.212	34.00	"	20.85
"	1814.59	2.250	34.25	"	20.70
"	1817.15	2.288	34.00	"	20.85
"	1819.35	2.326	34.75	"	20.40
"	1821.05	2.365	34.50	"	20.55
"	1824.12	2.404	35.25	"	20.11
"	1826.35	2.443	35.50	"	19.97
"	1828.57	2.482	35.75	"	19.83
"	1831.20	2.522	36.25	"	19.56
"	1833.45	2.562	36.50	"	19.42
"	1836.12	2.603	36.50	"	19.42

1393 DECAY RESULTS - TARANAKI CENTRE

DATE	TIME	H +	D +	INTERVAL IN SEC.	RANGE IN mf	DOSERATE mr/hr
11-10-57	14-14-40	46.25	1.94	131	3390	1437
	16-07-57	48.09	2.00	143	"	1315
	18-05-10	50.08	2.08	159	"	1183
	20-07-12	52.12	2.17	175	"	1075
	22-06-05	54.10	2.25	192	"	978
12-10-57	0-09-40	56.16	2.33	210	"	895
	2-09-45	58.16	2.42	224	"	839
	4-10-59	60.18	2.51	251	"	749
	6-12-12	62.20	2.58	264	"	712
	8-09-45	64.16	2.67	294	"	639
	10-15-11	66.25	2.76	317	"	593
	12-17-01	68.28	2.84	354	"	531
	14-18-35	70.30	2.93	379	"	496
	16-19-50	72.33	3.01	427	"	440
	18-17-25	74.29	3.09	460	"	409
	20-17-06	76.28	3.18	505	"	372
	22-20-16	78.33	3.26	549	"	342
13-10-57	0-24-42	80.41	3.35	630	"	298.5
	2-31-01	82.51	3.44	651	"	289
	4-24-50	84.42	3.52	701	"	268.5
	6-27-27	86.45	3.60	800	"	235
	8-34-31	88.57	3.69	890	"	211
	10-24-59	90.41	3.77	1019	"	184.5
	12-31-16	92.52	3.86	1172	"	160.5
	13-56-26	93.84	3.91	1191	"	158
	15-12-13	95.19	3.96	1223	"	154
	15-33-03	95.55	3.98	1258	"	149
	15-54-08	95.90	4.00	1274	"	147.5
	16-37-35	96.63	4.03	1320	"	142.5
	17-21-53	97.37	4.06	1370	"	137.2
	18-09-02	98.14	4.09	1435	"	131
	18-58-32	98.97	4.12	1484	"	126.6
	20-38-38	100.64	4.19	1540	"	122.1
	21-30-55	101.52	4.23	1599	"	117.7
	22-25-11	102.42	4.27	1659	"	113.3
	23-21-29	103.36	4.3	1748	"	107.6
14-10-57	00-22-01	104.37	4.35	1847	"	101.75
	02-27-42	106.38	4.43	1965	"	95.75
	03-34-41	107.57	4.48	2089	"	91.95
	04-44-37	108.73	4.53	2141	"	87.75
	05-57-44	109.95	4.58	2254	"	83.4
	07-14-02	111.22	4.63	2335	"	80.5
	08-33-31	112.55	4.69	2433	"	77.4
	09-56-53	113.94	4.75	2554	"	73.7
	11-25-21	115.42	4.81	2700	"	69.6

DATE	TIME	H +	D +	INTERVAL IN SEC.	RADIUS IN pf	DOSERATE mr/hr.
14-10-57	15-26-51	119.45	4.98	2978	3390	63
	16-21-08	120.35	5.01	3257	"	57.7
	17-15-05	121.25	5.05	3237	"	59
	18-12-21	122.20	5.09	3436	"	54.8
	19-10-27	123.17	5.13	3486	"	54
	20-10-56	124.18	5.17	3629	"	52
	21-14-01	125.23	5.22	3785	"	50
	22-25-45	126.45	5.27	4304	"	43.7
	23-31-28	127.52	5.31	3943	"	47.7

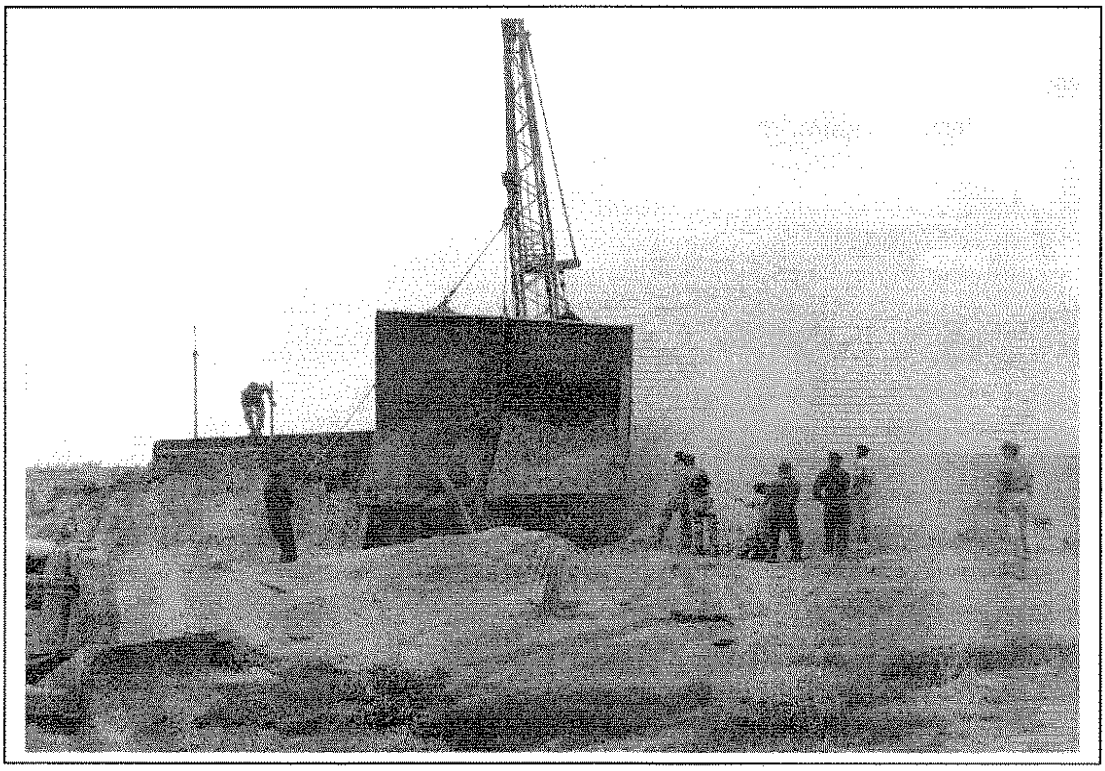
1393 DECAY RESULTS - TARANAKI CENTRE.

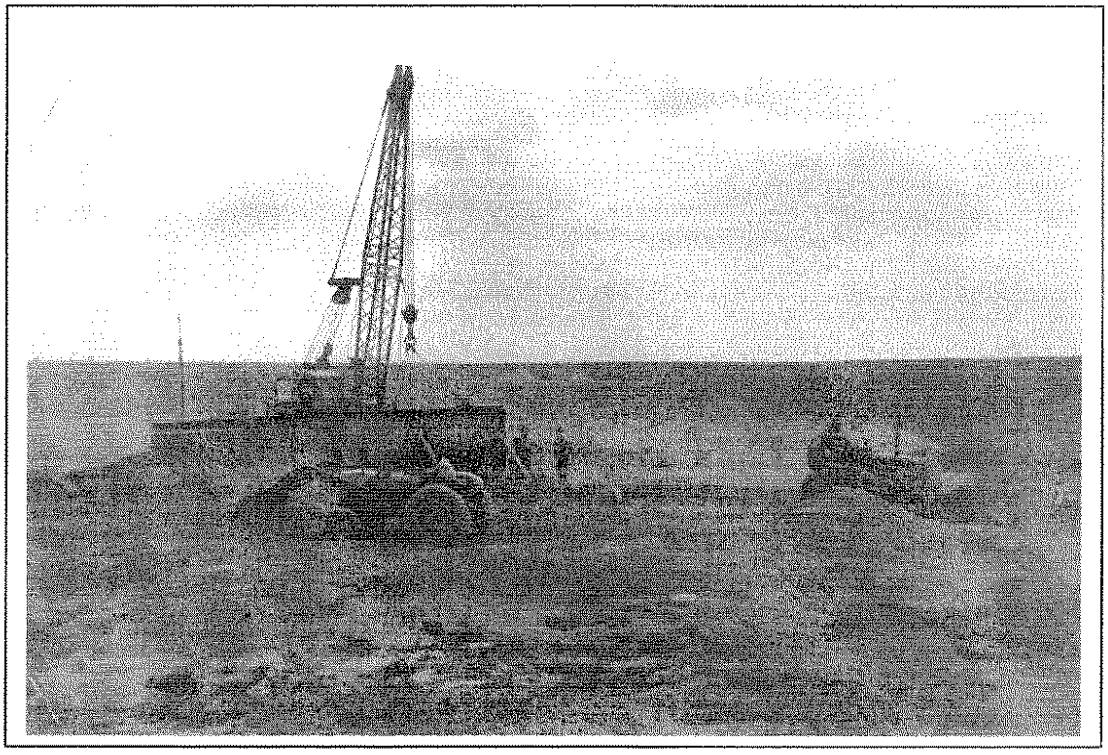
Date	Time	H +	D +	Interval in sec.	Range	Doserate mr/hr.
15.10.57	0.46.07	128.77	5.37	4479	3390	42
	2.01.03	130.02	5.42	4496	"	41.7
	3.24.51	131.41	5.48	5028	"	37.2
	4.46.52	132.78	5.53	4921	"	38.2
	6.12.40	134.21	5.59	5148	"	36.5
	7.42.27	135.71	5.65	5387	"	34.9
	9.17.42	137.29	5.72	5715	"	32.8
	10.54.18	138.90	5.79	5796	"	32.5
	12.37.22	140.62	5.86	6184	"	30.4
	14.26.04	142.43	5.94	6522	"	28.7
	16.20.11	144.34	6.01	6847	"	27.5
	18.24.26	146.41	6.10	7455	"	25.2
	20.51.21	148.85	6.20	8815	"	21.3
	23.16.41	151.31	6.30	8910	"	21.1
16.10.57	2.12.12	154.20	6.43	10411	"	18.1
	5.00.48	157.01	6.54	10116	"	18.6
	8.01.09	160.02	6.67	10881	"	17.3
	11.13.42	163.23	6.80	11553	"	16.3
	14.40.20	166.67	6.94	12528	"	15.0
	18.23.17	170.39	7.10	13377	"	14.1
	22.46.25	174.77	7.28	15788	"	11.9
17.10.57	3.17.15	179.29	7.47	16250	"	11.6
	8.14.08	184.23	7.68	17795	"	10.55
	13.18.15	189.30	7.89	18247	"	10.3
	19.49.57	195.83	8.16	—		—
18.10.57	2.58.03	202.97	8.46	22086	"	8.5
	8.34.32	208.57	8.69	20189	"	9.3
	15.51.06	215.85	8.99	734	90	6.8
	21.30.30	221.51	9.23	794	"	6.3
19.10.57	3.24.31	227.41	9.47	827	"	6.07
	9.26.18	233.44	9.73	839	"	5.95
	15.25.09	239.42	9.98	834	"	5.98
	21.39.59	245.66	10.24	935	"	5.34
20.10.57	3.34.58	251.58	10.48	1017	"	4.91
	9.37.18	257.62	10.73	991	"	5.04
	15.38.27	263.64	10.98	1013	"	4.93
	21.43.03	269.72	11.24	1049	"	4.76

1393 DECAY RESULTS - TARANAKI CENTRE.

Date	Time	H +	D +	Interval in sec.	Range	Doserate mr/hr.
21.10.57	3.32.16	275.54	11.48	1039	90	4.8
	9.36.11	281.60	11.73	1079	"	4.63
	15.16.19	287.27	11.93	1071	"	4.66
	21.32.58	293.55	12.23	1155	"	4.32
22.10.57	9.36.43	305.61	12.73	1146	"	4.33
	21.35.44	317.60	13.23	1169	"	4.31
23.10.57	9.27.39	329.46	13.73	1167	"	4.31
	21.20.43	341.34	14.22	1221	"	4.09
24.10.57	9.30.15	353.50	14.73	1227	"	4.07
	21.26.57	365.45	15.23	1346	"	3.71
25.10.57	9.23.39	377.39	15.73	1354	"	3.69
	21.49.20	389.82	16.24	1376	"	3.63
26.10.57	9.30.18	401.50	16.73	1349	"	3.7
	21.34.30	413.57	17.23	1417	"	3.52
27.10.57	9.31.24	425.52	17.73	1422	"	3.51
	21.33.20	437.55	18.23	1447	"	3.45
28.10.57	9.33.54	449.56	18.73	1482	"	3.37
	21.22.10	461.37	19.22	1570	"	3.18
29.10.57	9.19.01	473.32	19.72	1497	"	3.34
	21.36.45	485.61	20.23	1611	"	3.1
30.10.57	9.28.27	497.47	20.73	1677	"	2.98
	21.40.29	509.68	21.24	1622	"	3.08
31.10.57	9.38.22	521.64	21.73	1595	"	3.13
	21.36.07	533.60	22.23	1602	"	3.12
1.11.57	9.36.47	545.61	22.73	1633	"	3.06
	21.31.35	557.52	23.23	1715	"	2.91
2.11.57	9.31.56	569.53	23.73	1715	"	2.91

INSTRUMENT BUNKERS (SHELTERS)





See over for notes.

1. Approximate measurements for the shelters shown are 32 ft in length x 8 ft x 8 ft buried to near full height with earth mounded overhead to approximately 6ft.
2. Exposed top was additionally protected by approximately 2 ft of concrete in some cases.
3. Electrical power was provided by generators, accumulators and/or batteries. Power was required for lighting, instruments, refrigeration and forced air cooling.
4. Telephone, intercom and control cable connections were required in some cases.
5. Entrance sealed by approximately 1,000 sandbags prior to detonation and reopened shortly afterwards by re-entry parties. Countdown Schedules show 7 sandbag parties of 5 personnel for Tadje and 8 sandbag parties for Taranaki, all from the Engineer Troop. The Biak Countdown Schedule is missing.
6. The Range Commander's Report (Annex C) states that 37 bunkers were used during ANTLER.
7. Appears to be two separate recovery operations in progress. Welding between the centre modules seems to have been fractured (by the shock wave?) in one picture;
8. Lack of vegetation and stripped appearance indicates well inside blast area.
9. There was no "Yellow" or "Red" boundary fence between this point and the GZ.
10. Note that:
    - Protective clothing is not being worn;
    - Dust haze indicates presence of dangerous radioactive isotopes in a format that could be easily inhaled and retained in the lungs (3-10 microns in diameter), which when resuspended during recovery operations, would settle at an extremely slow rate (1 Km in 90 hrs);
    - There is no evidence of a Portable Air Sampler or a Cascade Impactor, used to measure the presence of significant airborne activity.

AUSTRALIA

ROYAL COMMISSION INTO BRITISH NUCLEAR TESTS IN AUSTRALIA

PRESIDENT: MR JUSTICE J.R. MCCLELLAND
COMMISSIONERS: MRS JILL FITCH
DR WILLIAM JONAS

SECRETARY: MR JOHN ATKINSON

GPO BOX 4044
SYDNEY NSW 2001

TELEPHONE 264 5155

EXHIBIT

Exhibit No. RC 497 Date 2.5.85 Place Perth

Tendered by P. McClellan

Witness T.L.G. Kamper

Source/Circumstances

Description

Statement

Transcript

FREDERICK LESLIE GEORGE DOMYER

I, FREDERICK LESLIE GEORGE DOMYER

state as follows:

I am now fifty-nine (59) years of age.

I joined the Royal Australian Engineers on 19th October, 1954 and retired on 12th April, 1967 as a Corporal. I joined the Engineers as a qualified plumber.

In 1957, I was posted to Maralinga. Initially, I was involved in doing plumbing work at the Roadside camp. After that, I drove a tip truck used in the construction of access lanes and roadways around the forward area.

On about two (2) occasions myself and some other engineers were sent in to demolish the remnants of buildings left close to the Marcoo crater. On these occasions, as we went through the Health Physics Control Point near the crater, we were issued with fully protective clothing, including respirators and given dosimeters, which we handed in on our return. Whenever we wanted to have a smoke or morning or afternoon tea, or lunch, we had to go back through the Health Physics caravan, where we were stripped of the protective clothing, checked for radiation and then showered as often as was necessary to get our radiation levels down to safety. On some occasions we would have to shower as often as five or six times, and I remember that my hair in particular seemed to be very difficult to get clean.

We didn't actually remove any of the materials demolished, but simply left them there for other personnel to take them away.

The buildings we demolished were about five hundred (500) yards from the lip of the Marcoo crater and, to get to them, we simply took the most direct route in a land drover, which involved passing very close to the Marcoo crater rim.

My major involvement with the setting up of the Antler series of explosions in 1957, was the drilling and blasting of the pits for the instrument bunkers. Shortly before each explosion myself, together with a team of about one dozen engineers, would sandbag the bunkers, to protect them against the blast.

I witnessed each of the three explosions from the Roadside camp and, after each, within about half an hour, my team of twelve (12) engineers and two (2) land drovers proceeded as quickly as possible to de-bag the bunkers to allow the boffins access, so they could collect their instruments. On none of these occasions were we issued with any protective clothing whatsoever. The bulldust was so heavy that we used to wear handkerchiefs over our mouths to try to stop breathing it in. On each occasion, we de-bagged the bunkers as quickly as possible and then returned to camp and went about our normal business. I estimated that it would have taken us about three-quarters of an hour on each occasion to de-bag the bunkers. We were never checked for radiation as we left the areas.

I don't know how close the bunkers would have been to the explosion, but I recall that, all around them, there were railroad sleepers which had been set on fire by the heat of the explosion. I estimate that they would have been no more than a mile from Ground Zero, and perhaps a lot closer.

When I arrived at Maralinga, I was issued with a film badge, which I kept and wore during my entire stay there. I handed it in when I left, but I don't recall it ever being replaced or checked while I was there. After leaving Maralinga, I volunteered to return, but was informed by the Army that I had received enough radiation during my 1957 visit and I would not be allowed to go back.

Dated this 30th day of November 1984
One thousand nine hundred and eight-four.

SIGNED by the said)
FREDERICK LESLIE)
GEORGE DOMYER)
~~in the presence of:~~)

F Domyer