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Excerpts from a Conversation with Renfrew Christie and Rodney Wilkinson, during the Conference on ‘Anti-Nuclear Activism in Africa: A Historical Perspective’, held at the Johannesburg Institute for Advanced Study, 3 April 2023.

Key:

JvW: Jo-Ansie van Wyk (Session Chair).

RC: Renfrew Christie (Responder).

RW: Rodney Wilkinson (Responder).

JvW: The focus of the conference is on anti-nuclear activism as part of the anti-apartheid struggle. We are curious to know of the international links during this period and the engagement with the government of the day. We are also curious to know the kind of actions that have been taken in the anti-apartheid struggle and engaging nuclear energy as part of that struggle.

Professor Christie, you have been very active in the anti-apartheid struggle since your student days. Can we start with how you became aware of the link between nuclear energy and the anti-apartheid movement?

RC: I come from a family of World War 2 heroes, and I learnt from them very early that what one does with Nazis is kill them. I am not a pacifist and from a very early age I knew what one did with Nazis: one went to war. When Nelson Mandela gave his, “I am prepared to die for this” speech at the end of the Rivonia trial, I was fully sympathetic. My grandmother and my mother and her

sisters were on the 9 August 1956 Women's March in Pretoria, when [the apartheid regime] extended 'the pass' to woman. So that tells you where I was coming from. My father died in Helen Joseph's arms, the great determined women's leader of the struggle. So, I understood without problem what had to be done.

I was conscripted as a child soldier into the South African Army. This was before it was possible to boycott under the 'End Conscription Campaign', which came 20 years later. I went to the army, and I guarded SASOL, the oil from coal programme, and I later proved in my doctoral thesis in Oxford, that SASOL as early as 1952, was producing heavy water. In my mind, SASOL was a target and indeed, eventually SASOL was blown up on the day of my trial. There were great plumes of smoke, 150 000 feet into the air. My lawyer came into my cell and said, showing me a colour photograph of the *Rand Daily Mail*, of SASOL burning. He said, "you are going to get at least 30 years."

I was conscious as a child already. I was anti-racist as a child. I remember as a 5-year-old, having an argument with the street gang — the little boys, there weren't any girls in this — and they were assuring me that the way to call a Black man in the street if you wanted him to do something, was to call him John. To them all Black men were John. I was saying, "this was nonsense, all Black men have names, they've even got surnames." Unusually for the time, my family made sure I knew the surnames of our servants.

I went into the army, and I guarded SASOL and Lenz, which is the big ammunition factory and the big ammunition dump south of Johannesburg. One day, they were changing the guards, and the guard truck takes a wrong turn, and we go through a bit of Lenz, and I see something that tells me immediately that the apartheid regime was playing with nuclear weapons. So, from the age of 17, I was hunting the South African bomb. I didn't tell anybody.

I then go to Wits, [and] I meet Rodney and his brother Justin, who are heroes [in] several ways. They are both champion fencers ... sword fighting fencers, and I think that is what enabled Rodney to be the guy that actually goes and blows up Koeberg, because he has that eye for the jugular ... he struck. I am not that sort of a person; I am not a striker; I just did the research. Whether any of the research helped Rodney in the end, I have no idea, [be]cause a spy does not know what gets through. Anyway, I met Rodney, and at that point he was part of the 'hairy left'; this was now 1968 through '72 sort of period. Rodney was hairy in all directions. He had hair on his head, and hair on his chin ... and he didn't actually wear shoes much. The sort of snooty upper-class liberals of the student representative council system there, dismissed him as perfectly useless. It turned out that they were the ones who were perfectly useless, and he was the one that is a true hero of South Africa.

Of all the achievements of the armed struggle, the bombing of Koeberg is there. Rodney bombed Koeberg in 1982; two and a half years after I was in prison. Frankly, when I got to hear of it, it made me being in prison much, much easier to tolerate. And it was eventually costed — the auditors forced the publication of the cost — at R519 million, in 1982. [The] Dollar to the Rand was equal then. So, we are talking about half a billion Dollars. The SASOL bombings — I made a list of it; it was about 6 times. Not only on the day of my trial, but later through the 1980s, SASOL was regularly bombed. Arnot, the coal-fired power station that I had worked on for my thesis, was bombed, and Camden [power station] was bombed, and a bunch of coal fired power stations were bombed. If you add it all up, everything that's in my thesis and in my confession — my tortured confession ... SASOL, Koeberg and the coal fired power stations; the cost comes to a billion Dollars in 1982. I have no idea if I actually was responsible for that billion Dollars, but I was spying for the ANC research unit

under Frene Ginwala. Some of my stuff got through, some of it didn't. Some of it was in my confession, which recommended something about bombing Koeberg just before they put the uranium in it. If it in fact had nuclear fuel in it, bombing it would endanger the people in Cape Town. I think that's the strategy that Rodney used. He did it just before. I think his achievement is spectacular.

Let me end with two little stories. The one is the headlines. I have the *Ottawa Citizen* of 4 June 1980, and it goes: "White scientist may face death penalty". This is in the middle of my trial; I am being tried for terrorism, and the possible sentence for terrorism is death. So, the world press played this out. So "White scientist may face death penalty," the people of Ottawa were assured. Two days later, "White scientist spared from gallows." I am not sure which newspaper that's from, but that was another overseas newspaper. So, I was saved from the gallows. Not that I ever thought I was going to be hanged, but the press did.

Then the other nice story, is [that] my confession gets to the lawyers at the point where I am going on trial, and one of the lawyers it got to was Priscilla Jana, another ANC legal hero, who ended up being an MP in parliament, and the confession is being slowly faxed on those old fax machines, to London, to another set of lawyers who would pass it on to the ANC. And this fax is working very slowly, [and while] one by one by one, the pages are going through, the Special Branch Police [conduct a] raid. They come stomping into the lawyer's offices — big boots and all; it sounded like one of those bad Soviet Union, or Nazi, or Western stories, about a jackboot operation. A young black lawyer takes the confession out of the fax machine and puts it into his shirt and then goes out onto the metal fire escape through a window, and hangs upside down on the fire escape, so that the Special Branch can't see him. When the police go away, having not found the thing they were after, he starts

re-faxing, and it gets faxed to London. The wonderful point of this story is that that young black lawyer is Penuell Maduna, who later is Nelson Mandela's Minister of Justice. So, there are some lovely stories there, great ironies.

As a student I shared a house with the great priest Cosmas Desmond, who wrote the books on the dumping grounds, the removal of Black people from Black spots under apartheid. He was house arrested and at that stage Winnie Mandela was house arrested. She was allowed out during the day and so was Joyce Sikhakhane, who was an ANC intelligence operative. We are talking about 1971 here. Winnie needed somewhere to go during the day, and so did Joyce, but they couldn't be in a room together with Cos Desmond, because he was banned and house arrested, and they were banned, and house arrested. So, officially, they were visiting the students who lived in the house with Cos. So officially, I was receiving Winnie Mandela as a guest; this happened often throughout 1971. She took the opportunity to teach me politics, and she also on occasion would cook me lunch. So, at the age of 21 or 22, I was being taught politics by Joyce Sikhakhane and Winnie Mandela, and Winnie was cooking my lunch, which was rather nice. Joyce Sikhakhane later mentions this in her own bio for the SADET [South African Democracy Education Trust] history publication series, about how there were various White students that she saw herself ... I am going to use the word developing instead of recruiting, because at that stage I wasn't made a member or anything of the ANC. There was another set of political inputs, both from this fantastic priest, Cos Desmond, another unsung hero of the country, who drove thousands of kilometres to every Black spot the people were being removed from.

I also need to say that I was not anti-nuclear. I don't believe the ANC was anti-nuclear; it was anti-nuclear weapons. I did what I did as part of a war, as part of an armed struggle. The bombing of Koeberg

was an armed struggle thing, rather than a debate about nuclear energy. Now obviously nuclear energy has dual use. The other thing about nuclear power stations is that they are wonderful targets. If you look at the integrated operations plan of the West, or if you look at any nuclear targeting at the time, nuclear power stations were targeted for nuclear explosions, because they expand; they are a force multiplier. They expand the power fantastically of any nuclear explosion. The fact that Rodney could get his bombs inside Koeberg, proved just how vulnerable nuclear power stations are in time of war. We are seeing that very much now in Ukraine, and the Zaporizhzhia nuclear power station, which could go 'bang' tomorrow with a missile going the wrong way.

JvW: Rodney, what were your early socialization in terms of anti-apartheid and then of course in deciding to plant the bombs at Koeberg?

RW: I went to St. Martin's School, previously St. Peter's. Trevor Huddleston was a founding member of St. Peter's. Oliver Tambo went to that school, so it was quite left, but liberal, rather than socialist. I first met Renfrew at Lenz, in the army, when we were seventeen. But I didn't have the opportunity of a wrong turn in a truck [like him]; I wouldn't even have known what I was looking at, but he did. I was just a guard in those towers around that ammunition dump; that was in 1967. Then we went to Wits in 1968, where I met Renfrew again, and I was quite a pacifist; that hairy face, you know, hair all over the place ... bell bottoms and flower power and all those nice things. And anti-Vietnam.

Everything changed quite abruptly in 1976, when I got a call up to go into Angola. The sergeant phoned my father, and told my father that he was an old friend of mine, and did my father know where I was? My father gave him my telephone number. So, he phoned me and said that if I did not pitch up the following Thursday at the station, I would be imprisoned. I went

home to my dad and said what must I do? He, being a Second World War artillery man, had been convinced that the Soviets were not really our allies. I mean they were scared, the Westerners of the Soviets. He said to me, "go to the army young man." So, I went. I had four choices: skip the country, go into hiding, go to jail, or go to the army. I went to the army ... where I was going for the jugular. I went with the spirit of trying to damage it from within, which is what happened when I went to Koeberg too. The trouble was that the jugular landed up being twelve of us deserting in a Unimog and I landed up under the Unimog, taking nearly my own jugular. I wasn't charged for that because the Unimog had been an operational vehicle inside Angola and there were no numbers on it. They didn't want to charge me or take me to the corporal or anything because it would expose the fact that we were in occupation. That experience too, determined in me that I was longer a pacifist but a soldier, and I had been military trained.

Afterwards, I was a fencing coach, and moved into a commune in Paarl, which is quite close to where Koeberg was. One of my fencing pupils could see that I wasn't making a lot of money out of fencing and [said] that I should take a job as a draughtsman in Koeberg. He knew an engineer. I consulted with the commune, and we decided that I would go in ... going for the jugular, as Renfrew put it. I went in and landed up 18 months later with the set of plans that I stole and which I wanted to take as a gift to the ANC, so that they can do something about Koeberg. I was against nuclear, a, and b, against the obvious fact that there were ... well I didn't know as well as Renfrew did ... the suspicion was that they were using shells with old nuclear waste, in Angola. I stole the plans and eventually my wife and I got to newly independent Zimbabwe, and found comrades who didn't tell me they were comrades, but they introduced me to Jeremy Brickhill, who was the only white man in ZAPU. We landed up throwing the

Koeberg plans through his toilet window in the middle of the night, because he wasn't answering his door. He got the plans to Mac Maharaj, who had them checked out in East and West — Soviet Union, America and Europe, and found they couldn't be faulted. They were suspicious of me, coming out of the army and suddenly bringing them such a thing. They thought I was a spy. Anyway, Mac eventually asked me if I would do the job, which really surprised me, but, as he said subsequently, I had the best chance of getting back in there. Mac introduced me to Aboobaker Ismail, who was running special operations. We had six meetings. During the first one he said to me, "go straight back to Cape Town and get a job." On the 19th of July, I think, 1982, the only job I could find was at Koeberg, as a piping draughtsman.

The bit about Renfrew's input: I was guided by Rashid [Aboobaker Ismail], and he obviously had been guided by Renfrew, because all the suggestions came from [Renfrew's] confession, like bombing just before it went online ... And the date that was closest to that was 16 December 1982, a public holiday. That was the target day, but it fell on a Thursday rather than the weekend. I couldn't use a weekday, because there were people everywhere and so it had to be on the weekend when there was nobody there, to avoid killing anybody. So, that bit of advice from Renfrew, came through, and the targeting as well, I am sure. Because there were obviously political targets with the reactors, but the real damage was caused by the two bombs which were under the control room, in the electrical cables, because it spread the fire to both ends of the cable, and the control room controlled all the cables. It must have been a big mess.

I fled before the bombs went off and climbed the fence into Swaziland ... and eventually fled to Maputo, where I met Joe Slovo and Oliver Tambo. They flew my wife in ... When Joe [Slovo] came to pick me up, he was in a brand-new white BMW, and I said, "I thought we were communists, how

come you drive a car like this in Maputo?" He laughed and he said, "two weeks ago it was stolen in Johannesburg." Then I ran via Maputo to London and there started another project.

When I got to London, I got introduced to Aziz Pahad, and he had been told to give me 1,500 Pounds and [tell me to] disappear. I said to him, "I'd rather that you give me 150 Pounds a month and I'll work full-time for the ANC," and he agreed. Mac didn't think that was very clever because he thought, and he was correct, that if I were to continue to work for the ANC, the secret of Koeberg would spill out, and it did. Anyway, with Aziz I had envisaged a convoy of Land Rovers carrying tourists, safari style, but the problem with that, was that every Land Rover would need a team of drivers and people on the in. Where-as, if we had a huge truck, it would be only one team that could get caught. I identified a military, 8-ton 4-wheel drive Bedford truck, brand new out of the box, with steel packed on it, so that metal detectors wouldn't detect anything wrong. I put it all together. It took me a year to build a compartment, the seats, the lockers and the extra petrol tanks and spare wheel - changing the whole lot. [We] shipped it to Mombasa, and trained a team [consisting] of a driver and another guy who was going to be a passenger and watch the other passengers and driver team, so that everything goes smooth. They made a documentary on it called The Secret Safari. When that thing was shipped out, I never saw it again. Except that I flew to Lusaka to show them how to load it. We are off the subject; this is anti-nuclear ...

RC: We not off the subject at all; we're not anti-nuclear, we were in an anti-apartheid war. Anti-nuclear means that you don't believe that the atom can split.

JvW: Rodney, thank you also for that. The Bedford 'secret safari' experience gives us insight into the adaptability of activists. Even though you were out of the country, you were able to reposition yourself and your organisation. You got

a new plan and still continued with the anti-apartheid struggle.

I want us to move on a bit to the activities that you had undertaken. Rodney, can I start with you. Once again, you had early exposure, a network of individuals that you knew, technical people. Prof Christie would know a little bit more about the science of how it operated. You had a group of friends. The army was an experience that added, so to speak, to the socialization that you eventually put into action. But how were you able to get the bombing material, because that was quite a decision to take? And then of course living with the legacy, the moniker of ‘the Koeberg bomber’. I am just looking at the similarities between you and Prof Christie. The experience very early, the awareness of injustices, the exposure to individuals that thought different of the time. You also had an army experience that you experienced different and formed your views also with regards to anti-apartheid. And then, of course, working at Koeberg. So, sharing those similarities, but you are still referred to singularly as the Koeberg bomber. Are you comfortable with that reference, or how would you see your role?

RW: I'll start off with socialization. In primary school, we had a Zulu nanny, and she became a very close friend over the 13 years she worked for us. So that convinced me that the White attitude was pretty stupid. And also walking to and from school, we witnessed pass law enforcement, where the policeman would drive around the corner and Black men would run and jump over fences and walls and get attacked and locked up, because they did not have passes. They were not allowed in the area, but they were working for us. So that was an early motivation.

The army: when I was 17, I had a romantic notion of what the army would be because my father too was in Italy in the war, and it was quite a romantic idea to be a soldier.

So, I tried quite hard. I did two army stays; the first was in '67 and second was in '76. Nine years apart. For the first time I was in, I was quite an enthusiastic soldier in the beginning. By the end of it, I went to Wits, and it was anti-Vietnam protesting and that phase. Then, of course, back to the army. By that stage I had a pregnant wife. So, I was not in the mood for being a soldier at all. But the military training was significant because when I was asked to participate in Koeberg, I asked to be military trained. And they said, "You've been trained, better than what the Soviet Union can do." So, they didn't train me again; they just taught me how to use the limpet mines.

The legacy: it's a big mistake to have it ever come out. Mac [Maharaj], wanted, when I got to England, that I should disappear. He didn't agree with Aziz's agreement with me, to let me carry on in the ANC, because he said the story would leak out eventually, because of that. And that's what happened.

In 1994, I was living in Cape Town in Observatory, and bumped into Muff Anderson and Riaan Malan. We had a common friend ... my sister's boyfriend, Adrian, who had helped me jump the fence into Swaziland. Muff, ran the smuggling end of the operation, and had discovered, from Joe Slovo, that I had been Koeberg bomber. She had thought, again, that I was a spy. Riaan [Malan] picked up from her that night in the pub that I had done a big job, and he identified 1982 as the year of the job. He put two and two together and went to Adrian, and said "Muff tells me, Rod hit Koeberg." So, Adrian said, "she shouldn't have told you that!" Cover blown. So, Riaan knew. He went to another journalist, and she phoned me, and she said we know this story, and if you don't talk to us, we going to write what we know. [At that time] I was in the maximum intelligence, and we weren't allowed to talk to the press. I got permission from the Director General to talk to David Beresford. I trusted him and gave him my whole story, and he wrote the first article about it, and that spilled the beans. That is where the legacy came from. It wasn't

supposed to ever come out. Anyway, I've had a lot of fun with my legacy.

JvW: We also know that the Truth and Reconciliation Commission, has exonerated you and given you amnesty for the events that occurred at Koeberg.

Professor Christie, you were also very much involved with the ANC in London; you had contacts with Frene Ginwala, who later became Speaker of Parliament. During this period, what did you experience in the ANC as an anti-nuclear energy sentiment? We know that it was an anti-apartheid struggle, but what were your experiences in terms of the thinking of nuclear energy and of course nuclear bombs, etc?

RC: Let me be clear that I had very little contact with the ANC during my four years as a doctoral student in Oxford. I was suspicious of the London ANC as being full of spies, which later turned out to be true. But I did develop a relationship with Frene Ginwala. I think we first met in the University of London Seminar on South Africa, but I was not close to the ANC in London, at all. I don't think I ever went there, because I was suspicious of it.

I am not deeply familiar with the relationship, say with the CND [Campaign for Nuclear Disarmament] or with anti-nuclear energy struggles. You had to approach the CND with great suspicion, because they, as an organization, was very open to penetration by every spook outfit in the world. You never knew who you were talking to at CND either. And obviously the British anti-Soviet spy mechanisms were everywhere, as they should be in a Cold War. So, I kept out of that, so I can't really comment. You'll get this much better from Abdul Minty than what you would get from me.

I do want to ask a question though, in that context, of the effect of the Soviet Union on the policy to bomb Koeberg. I don't believe that uMkhonto weSizwe — the Spear of the Nation, the ANC army — or the ANC itself decided to bomb a nuclear

power station without Soviet permission. That just doesn't ring a bell at all. You're in the middle of a struggle where your main backer, your main financier, is the Soviet Union, and you don't do something as big as bomb a nuclear power station without Soviet permission. The point I am going to is that on 9 June 1981 — 18 months before Rodney went in and bombed Koeberg — the Israelis bombed a Soviet built nuclear reactor in Iraq. Saddam Husain's nuclear reactor, Osirak. That was a staggering thing world-wide, because nuclear reactors in general are off-limits and off-target, and the Israelis did this for their own reasons. I am quite sure they got American permission. But did the Soviet Union say yes to the bombing of Koeberg as a reprisal for the bombing of Osirak? Was that bombing in the minds of the 'Cold Warriors'? The Cold War was a hot war, of course, quite often. There were proxy wars all over the place, and the anti-apartheid war was a proxy war. But did the decision to bomb Koeberg on the part of the ANC, get permission from the Soviet Union? I am prepared to bet it did.

You also got to be careful there. The Soviet Union was extremely careful not to let unnecessary eyes into their real nuclear policies, and I have asked several of the people who subsequently wrote about what the Soviet Union was doing in South Africa from the Soviet archives' point of view. And they eventually say, no, we know nothing of the nuclear question, because it was kept absolutely secret inside the USSR. But the question is, was the bombing of Koeberg a reprisal for the bombing of Osirak? I don't have an answer. But my guess is, yes.

RW: I agree with you. The Soviets definitely did approve it, because of the length of time it took the ANC to come back to me when they already passed the plans through the Soviets and the East Germans and that's where they were armed from. The limpet mines came from East Germany.

Mike Kantey (MK):

This thing that you are raising, Renfrew, will be of critical importance for this country, where we have been talking about the interface considering nuclear energy for electricity, and the application of nuclear weapons on the other. You can always argue in anti-nuclear circles in South Africa, that the weapons program and the civilian energy program are like Siamese twins; they are joined at the hip. So, when you look at the military strategic value of the attack on Koeberg, I would say, you also have to consider the context of an overall sabotage program. Incidentally, on the role of social influence: my father employed Denis Goldberg ... and gave evidence of mitigation at the trial. And Denis, as you already know, were training people in sabotage. So, for me, given the fact that the coal-fired stations were fair game in South Africa, SASOL was a fair game. Looking at infrastructure, I don't think the nuclear aspect — other than the fact that the nuclear fuel had not been loaded, which was for me a respected consideration — was as easy as a one-to-one correspondence with Osirak. I think that you have to see the larger context of a military strategic assault on infrastructure projects in South Africa; total war, total strategy. So, for me, maybe a consideration but I would not say it's a sole consideration.

RC: If that's a question, I would agree. The reason for the power stations being a target is, [that] to enrich uranium, you need vast quantities of electricity. They built so many power stations; so many that when they stopped enriching uranium, they supposedly had too much electricity. But the reason they did that, is in my doctoral thesis. I go into Eskom, and I do a thesis on the electrification of South Africa, starting way back in 1895 or 1905, and I track it all the way through. But the purpose by the 1950's, and the reason for the huge World Bank loan programs, IMF loan programs to South Africa in the early

1950s, is to build power stations to produce uranium from the gold mines. Especially for Britain, because at that point Britain was trying to build its own atom bomb and then hydrogen bomb, and they are desperate for uranium. Smuts is in on the Manhattan project from as early as 1941, and there is a guy called Bain, who was sent from America in 1941, to start looking for uranium [in South Africa] and he finds uranium in the gold ore of the South African mines. And then there's the famous supposed discovery in a literature search in 1943, where they turn up a geologist's report of 1923, saying there is uranium in those gold mines. And that leads to Ernest Oppenheimer and Smuts being able to open up the West Rand mines and the Orange Free State mines, which was not economic without uranium, or were not likely to be. This is all in the wonderful biography of Ernest Oppenheimer, which shows Smuts effectively handing over to the National Party, a fully worked out plan for South Africa to produce uranium. Of course, Smuts hands over to the National Party when they get power in 1948, the SASOL secrets from the Germans of the Second World War, on how to make oil from coal, and the Nats (National Party) grab it with both hands. Within four years of the Nats getting it, they are producing heavy water. So, where I am going is that uranium is then central to the future of the gold mines, because it massively improves the profitability of the gold mines and hence the South African economy. And Eskom is heavily backed by the West with huge loans that funded Eskom for the next 40 years. So, the West is deeply invested in having a forced labour system, which is the pass laws, and the compounds, because they produce the cheapest workers to mine the gold and uranium.

The West's rules then are, keep the Soviets out ... get the gold out, get the uranium out, whatever you do, don't let the people vote. They are desperately opposed to democracy in this country for 40 years. The West is opposed to democracy — I say this

loudly — for 40 years, because they want gold, uranium, diamonds and coal via the power stations, from a forced labour system, which is the pass laws and the compounds. So, it's all linked, Mike, I agree, and in that sense, apartheid is caused by uranium and gold, and it is most certainly a nuclear state, long before it actually starts building nuclear weapons. It eventually sells something like 100 000 tons of pure uranium to the West. My honours and master's theses were on the Kunene River Hydroelectric Schemes, and of course you had Rössing uranium, which I guess took the electricity from the Kunene Schemes. I sent my master's thesis on the Kunene River Schemes to SWAPO, and in due course the Kunene River Schemes were also bombed. I don't know if they did it because of my master's thesis, but it's the same thing. So, you can add the bombing of the Kunene River Schemes at Calueque.

And while I'm there, it is worth saying that they cleared the Buccaneer bomber, and I have this, from a very good thesis at the Monterey Naval College in America in about 1983, and from much later, an Airforce officer. He was in the position to know at the time, and he said that the Buccaneer bomber was cleared for delivery of nuclear weapons. When they were doing all that bombing of the bridge at Cuito Cuanavale, in the battle of Cuito, they were repeatedly targeting the bridge. My theory is they were practicing for dropping a nuke in Angola, on the Cubans at Cuito. How close we came to that we'll never know. We never going to know much of the story, because it's all hidden in the secret archives of the secret services. But that Buccaneer bomber was certainly cleared. And then you go to the G6-G5, very long distance 6-inch artillery shells. I am prepared to bet that there was a plot to put a nuclear weapon inside those artillery shells.

But I am agreeing with Mike, it's a nuclear, uranium state from the beginning of apartheid. Apartheid is exactly coterminous with the Cold War, '48 to 1990. By 1990, they

no longer need apartheid in the West, and they are prepared to give people the vote, because they've won the Cold War. But until then, the West is solidly opposed to democracy in South Africa.

MK: **If I can just add a rider on that excellent summary that Renfrew gave us ... when I was commissioned to do research on the uranium industry by Greenpeace in Amsterdam, I discovered that on the board of Rio Tinto Zinc, were the Queen's secretary and Lord Carrington (who was involved in the negotiations on Zimbabwe). So obviously the British government, under Thatcher in particular, were hardened supporters of, as you put it, a nuclear state. And I think the apartheid nuclear state by virtue of our illegal possession of Namibia and most certainly inclusive of about 250 kilometres of Southern Angola and the DNZ, is one thing. And I think that the deterrence theory, which is basically the theory that Neil Barnard, head of military intelligence, introduced into the State Security Council, is very much embedded in an ability to deliver. And I think the other thing ... is the testing of the Jericho 2 missile in Arniston. So, we had these industrial installations all over South Africa, which are propping up what can only be described as the total strategy approach.**

JvW: **And that links to an earlier comment on the importance of infrastructure, because that was part of the apartheid state's way of expanding its power by letting the economy grow. So, it was also a way of projecting power by getting this, let's call it a form of economic empowerment. And all of those infrastructure and the maintenance, etc. required electricity. Also, very early on in the 1920s, and even after the war, Jan Smuts had a meeting with Neils Bohr, for example. Smuts also had contact with nuclear physicist Van der Byl, So, there was very early on a great awareness of the importance of uranium and energy for force projection.**

I want to return to some of the main focus areas of the conference. What were your links with other governments? Rodney referred to the role of the Soviet Union, Swaziland, Mozambique, and newly independent Zimbabwe? On your side Prof Christie, what were your engagements with other government officials, etc?

RC: Well while I was doing my doctoral thesis in Oxford, I was in what was known as the Cold War College ... which has an East European and a Russian study centre, and a Latin American study centre, and so on. It meant that I met people from the entire world doing modern studies. And quite plainly among them, there were people who went on to very top jobs. So, I met a whole lot of people who subsequently became really important. St Antony's staff, the foreign officers and the military of the Western world. I didn't have any formal connections to the British government or to any governments at that stage. Those only came much later.

JvW: Rodney, your arrival in Swaziland, was that through the ANC channels? How did that go?

RW: The Swazi government had been quite rough on ANC people, but there were a lot of civil servants who were sympathetic. When I got to Mbabane, the fall-back plan; they said they would meet me at the Wimpy bar, and that never happened. Every hour on the hour, I would go back, because there wasn't another fall-back plan, but eventually I tried to phone Rashid (Aboobakar Ismail) in Maputo, from Mbabane. And there were long queues at the payphone. And so, I would get in the queue, being the only White man. Get to the phone, dial the number and it sounded like a South African engaged signal. I would put the phone down and go back to the back of the queue again, and by about the 4th time I pretended to the queue that I had actually gotten through. So, I listened to this engaged tone and started to pretend to talk and then suddenly the phone got

answered. The engaged tone was actually a ring tone. So, then I couldn't speak on the phone because I knew the phones were being listened to. I couldn't say that I had jumped the border, and I couldn't say that I couldn't get out, because I haven't got any stamps in my passport. And what must I do now. Eventually, I blurted that all out and Rashid said, get on the next flight at 5 o'clock to Maputo, and the customs man didn't even look at my passport. He had been warned that I was coming.

JvW: Rodney, earlier you mentioned that you are anti-nuclear. I'd like to hear your views on that.

RW: So, basically about the waste. There's no solution to waste storage and how you going to mothball Koeberg for example. It's a never-ending question. You can't price it; you can't put a price on it. Uranium having a 250 000-year half-life. How much is it going to cost by then?

JvW: What goes along with that is that nuclear waste is still usable, it's not something that you simply just discard. So, another aspect to anti-nuclear activism, is the potential for re-use of waste ...

RW: Just saying they got something called a breeder reactor, if I am right, Renfrew.

RC: Yes.

RW: ... where they re-use the waste and enrich it even more.

RC: It's worth saying that the United Kingdom did a test in the United States about 1956, I forget the code name, but where they actually used waste from a nuclear reactor and they proved that they could blow up a nuclear explosion, using nuclear waste. I'm blank on the code name of the actual explosion, but that has been done. And the point about the depleted uranium is also, as I think Rodney mentioned, it's put into shells, into artillery shells and because it's so heavy it goes through a tank much better than what steel would. But the waste of the nuclear power station can be used in at least two military ways.

Peter Becker (PB):

On the subject of depleted uranium – technically, it is from the preparation of the fuel, not from the nuclear waste. Depleted uranium is the by-product of fuel fabrication.

RC: That is a useful correction, thank you

Anna-Mart van Wyk (AvW):

One of the things that people are very concerned about, is the potential of a dirty bomb, where you take the nuclear waste from medical isotopes, or nuclear power stations, and combine that with conventional explosives, thereby creating a dirty bomb. It doesn't have the explosive power that an atomic bomb would have, but it does have the radiation, which is very harmful. The depleted uranium bombs were quite a big thing in the Iraq war, where America used some depleted uranium in shells. A lot of American soldiers also got exposed to that and developed serious health issues, as did many Iraqis. So, Renfrew you are quite right with regards to the concerns about the depleted uranium.

There was a comment earlier on about the Buccaneer, which was earmarked to carry the South African atomic devices. The Cheetah was also built to be able to carry the missile with a smaller nuclear warhead. South Africa, by the end of the 1980s, came very close. They had the rockets; all the missiles that had been tested along the Southern Cape coast, but also the smaller warheads. By the end of 1980, South Africa was very far advanced actually with the smaller nuclear warhead for missiles. And then, Renfrew, you also mentioned the G5 and the G6. The G6 in particular was able to shoot a tactical nuclear shell.

RC: To add on to that – there's a glide bomb series called the Raptor, I think there's a codename, Holo or Hobo. And that enabled the Cheetah or the Buccaneer to deliver from further away and so be less endangered if the thing went off. And

that could glide much further than an artillery shell. Right, at the point where the decisions are made to get rid of the bombs, literally a week or two before, these things are about to go. There is a Raptor 2, I think you know this?

AvW: Yes, that's correct.

(Unknown)

I think the distinction ought to be made between strategic missiles and tactical missiles. Because the strategic missiles are like the intercontinental ballistic missile that can travel over vast distance launched from a submarine or from a silo, where-as the tactical is a battlefield missile, of which the depleted uranium artillery ordinance would be an example. So, what we have, as we said in the beginning, is this inter-relationship between the civilian nuclear energy program and the military application.

RC: It is worth saying that there is a doctrine that says there is no such thing as a tactical nuclear explosion, and the doctrine says just one nuclear explosion can lead to the entire world firing their missiles. So, this idea that you can get away with a small nuclear that is 1 to 2 kiloton explosion and not cause a world nuclear war, is mocked in the literature. Because the moment you let off one small nuclear, everybody else is going to start pushing buttons. This is the theory. So, they may be called tactical but in the international political framework, there is no such thing as a tactical nuclear explosion. We may see a real test of this if either side in this Ukrainian insanity actually lets off a small nuclear weapon. Does that go up the chain and everybody pushes the button?

JvW: I would like to hear your views on South Africa's disarmament decision. Did De Klerk disarm out of conviction or was he under pressure to do so?

RW: I think Renfrew is the better one to answer, but yes, things definitely didn't come from the democratic government. I am quite amazed that they continued to allow Koeberg to carry on.

JvW: **Ok so you have no doubt in your mind that there were, well one can easily say racist undertones in that decision to disarm, and of course not to be able to carry that over to a government, that at that stage was not trusted. Renfrew, your views on the disarmament decision?**

RC: I have lost it but somewhere in the literature is a reference of a CIA future study that suggests because of Nelson Mandela's time in Libya, that if the ANC gets hold of the bomb, it may well pass it on to the then ruler, who was Gaddafi. So, there was a Western imprimatur; it's the first requirement of the settlement; there's no settlement without it, that the bombs must disappear. There is no way that the West basing themselves on the likelihood of the ANC passing it on to someone else. There is no way that the West would allow any sort of settlement in South Africa without the bombs disappearing ... Piece of writing that is the very first requirement of the settlement. If there is a settlement that gives the ANC the bombs, the fear of them being passed on to other users was very, very great in the minds of West. Now, I think that one must read who the ANC were; that it's a valid motivation, I can see where they are coming from. So, I am quite sure that De Klerk and probably PW Botha, before that, they were both told, you do not go to "one person, one vote" in South Africa, before you got rid of the nuclear weapons. And that was an absolute instruction from their Western puppeteers. On their part, they absolutely did not want Black people to have nuclear weapons.

You must remember, one of the things that I was found guilty of – no I was found "not guilty" on appeal – was a document where they did a study of the earthquake, the seismic effects of small ... well of different sizes of nuclear weapons, and they did it by race group in South Africa. It was a study of South Africa, where is it safe to let off different sizes of nuclear weapons. So, it is ethnic cleansing being studied under the guise of "where can we let off peaceful nuclear weapons." I was eventually found

'not guilty', because it was shown that there was a copy on 'open access' in the Library of Congress in Washington. But the point I am making is that, it is possible that with very small nukes to take out particular bits of South Africa without doing too much damage to other bits. Metaphorically, you can bomb Soweto without taking out Houghton. So, on both sides nobody wanted the other side of this colour war to have nuclear weapons.

I am quite sure that FW de Klerk himself and the ruling thought in the National Party at that time, did not want the ANC to get them. And then on the ANC side, they had been opposed to nuclear weapons themselves and did not want the bomb. What would they do with it? So, it was a mutual agreement on all sides - the bomb has to disappear.

AvW: **I have a primary document actually confirming the pressure on South Africa to dismantle any nuclear bombs that they might have. It was in a meeting between the ANC, the AEC, and Armscor, where they were discussing various issues. Definitely there was pressure; Renfrew is absolutely right. It was in 1988 or 1989, where Armscor wanted to continue with the nuclear weapons program, but the AEC and Department of Foreign Affairs felt it was too risky. So, they were having this luncheon to discuss the way forward, and basically the first line said: "pressure on South Africa to dismantle".**

Noël Stott (NS):

I wonder if Prof Christie knows whether De Klerk informed the ANC or Mandela himself about the dismantlement before the announcement in March 1993?

RC: I have no evidence, but I am quite sure. Thabo [Mbeki] was in negotiations with the apartheid state from 1983 onwards, and I have not the slightest doubt that they were in those negotiations, not that we will ever get those documents or proof and certainly by the time De Klerk was active, I am quite sure it was agenda item one – on all of those negotiations. Then

again, we're not ever going to get proof of that. They kept it secret until De Klerk's announcement in 1993.

Somewhere in a meeting, I asked Waldo Stumpf why he looks like he is blatantly lying, and I throw some proof at him about nuclear weapons; this was about 1992. He blushes deeply and 'hums and haws' and he clearly can't answer the question. So, it leaked a bit. But the answer is, "yes", I am quite sure the ANC was party to that decision.

PB: I was given a pamphlet by someone who found it in an old second-hand book and passed it on to me. It is detailed blueprints of the Koeberg plant, in pamphlet form. It's got blueprints, it's got electrical diagrams, a whole lot of detail. It is the plans they would have used for construction. By the appearance, it is a document for the construction of Koeberg for the engineers. So, it would be dated to the pre-1980s.

RC: So, then it was not a public pamphlet; it was something for the engineers to use while they are building the thing. That's more plausible. I very much doubt that Eskom would put out public things. The plans of Koeberg that I took out of the Eskom library surreptitiously, was in the secret section. Those plans were certainly not publicly available. And I am sure the ones Rodney got his hands-on weren't either.

JvW: Rodney, how were you able to obtain the plans for Koeberg? Was it a hand-drawn sketch from what you had seen? As you were a draughtsman, you most likely had access to those plans?

RW: My first eighteen months there, when I got those plans, we were drawing the moulds for the concrete work, the shuttering. The engineers would call one in and say they want shutters for such and such a room number. And so you go to the library, and there was a librarian there, and you say that you want the plans for this room number, and he would go to a catalogue – it was about an inch and a half thick of A4

with floors on it and different buildings. He could identify the number of the room and which drawing it refers to, the big drawing, detailed drawing. And so, he would bring the detailed drawings and you could do your job. Now that reference catalogue is what I got the librarian to make for me, and he delivered it to my drawing board in a brown paper bag the next day. It was about 2-300 pages.

PB: Is that plan that you had available, or did you hand it all over Mac Maharaj for verification?

RW: I have never seen it since it went through the bathroom window to Jeremy Brickhill.

JvW: So, I suppose whatever is available is still either in Megawatt Park, or somewhere in Moscow.

RC: We should say it is still a national key point and still has to be defended, and the very last thing we need it plans of Koeberg floating around the place. It's illegal, it's bad policy, we shouldn't do it.

JvW: This brings me to what you regard as the successes, which you have contributed to, during your time as activists? (Related to nuclear)

RC: I was active on a lot of fronts ... Maybe a final bit from me: I was on a world panel for the World Academies of Science (the IAP) and our job was to get a world agreed set of science research ethics, and I was chosen because of my anti-nuclear weapons in apartheid work, where I was saying that all the universities in South Africa that worked on the apartheid bomb, were desperately unethical; they were building a racist bomb, which at least some people were planning to use only on Black people. The object of that particular document – it is published by Princeton in 2016 – was to get India and China who, by then were getting really serious in world science research, on board with the world agreed set of research ethics rules. And so ... we came up with something that we got signatures of virtually every Academy of Science president in the world. I took

my experience of what was really wrong with the racist nuclear bomb, into that debate on what scientists should research and what they shouldn't research, and the whole debate on dual use. Because if you are actually at Wits or UCT, and you are researching nuclear stuff that is used for the apartheid bomb, you are then an apartheid world war criminal in my head.

RW: There are four aspects to that bombing: the armed propaganda value, the actual physical damage, the 18 months of non-production of nuclear waste, and the cost – half a million as I mentioned, and they never caught me, and no-one died.