Sweden and the Making of Nuclear Non-Proliferation: From Indecision to Assertiveness

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This report concerns a study which has been conducted for the Swedish Nuclear Power Inspectorate (SKI). The conclusions and viewpoints presented in the report are those of the author and do not necessarily coincide with those of the SKI.
Table of Contents

Acknowledgments I
Summary in English and Swedish III

1 Nukes in whiskey! Or, the robustness of foreswearance 1

2 Debates on nuclear weapons issues 5
2.1 Approached from Abroad: The quest for Sweden's uranium, 1945 6
2.2 Discussed but not debated: Nuclear research efforts before 1954 8
2.3 Indecision and the making of a common denominator, 1954-1960 11
2.4 The active decision to forebear, 1968 15
2.5 The NPT and after 18

3 Sweden as a promoter of non-proliferation 20

4 Accounting for the turn to non-proliferation activism 23
4.1 Sweden's security political situation 24
4.2 Sweden's foreign political culture 25
4.3 Sweden's foreign policy style 26
4.4 Political structure and domestic political values 27

5 Conclusion: From bomb-thinking to non-proliferation assertiveness 28
Acknowledgments

The present study is related to two ongoing projects. An earlier version has recently been presented for an international comparative project that tries to compare the reasons and avenues for various non-nuclear-weapon states to develop and pursue pro-activist non-proliferation policies. Furthermore, the study of Sweden is one of four case studies included in my Ph. D. thesis in progress on how non-proliferation assertiveness have become parts of the foreign policies of the four Nordic countries: Denmark, Norway, Sweden and Finland. I am indebted to a number of persons and institutions for their kindness and support.

In April 1994, I first interviewed officials from the Swedish Nuclear Power Inspectorate (SKI) and was met with an openness and kindness that greatly facilitated my research for an article on Swedish nuclear export controls. This spurred my determination to continue working within the non-proliferation field - preferably on a topic related to the Nordic countries. When I was accepted as a Ph. D. candidate at the Department of Peace and Conflict Research, Uppsala University, and moved to Sweden in April 1996, SKI had offered to finance my Ph. D. studies. It is necessary to add that the support of my research is by no means limited to finances as I have profited greatly from discussions at SKI - not least with staff members from the Office of Nuclear Materials Control. This SKI publication that addresses the making of Sweden as a non-proliferation actor is a first effort to work with the four Nordic countries that will be included in the thesis. A study of Finland and non-proliferation will also be published by SKI in February 1998 and at a later stage, studies of Denmark and Norway will follow as I start analysing these countries.

Since 1992, I have been a member of a European research group on nuclear non-proliferation established by Dr. Harald Müller from the Peace Research Institute Frankfurt. For six years I have had the pleasure to participate in various projects and conferences on non-proliferation, disarmament and export controls and have been able to contribute with studies of the Nordic countries for the monographs produced under the guidance of Harald Müller. In 1997, he initiated a new project with ambitions beyond the European context. The objective is to analyse why and how various non-nuclear-weapon states have chosen this option not to proliferate and why they even became pro-active in the formulation and support of non-proliferation efforts. This project by Harald
Müller is supported by the Ford Foundation and between 29 September and 3 October 1997, Harald Müller convened the researchers as well as an advisory panel at the Rockefeller Foundation Center in Bellagio, Italy. It is hoped that this publication will also allow readers to criticize and comment it before the material is incorporated with the other country studies and published with Harald Müller as editor. At this stage, where my Ph. D. thesis is still two years from completion, I remain grateful for any comments and suggestions readers might have.

Lars van Dassen
Uppsala, February 1998
Summary

The Swedish nuclear weapons programme has been and continues to be the subject of many studies. Many lessons can probably be drawn from such efforts for their own sake and the general knowledge that can be obtained on how decisions on the acquisition of weapons are made and not made. Moreover, the focus on the Swedish nuclear weapons activities can turn out to be spectacular if they reveal something new in the shape of an illegal activity or a conspiracy. In this light, it is not so spectacular to study the foundations of nuclear non-proliferation which is the aim of this study. But there is so much more reason to do so simply for the reason that non-proliferation became the winning principle. That this was at all possible is a peculiar fact given Sweden's strategic position, its need to guard neutrality and sovereignty on its own and the assets in terms of resources and skills at hand that would have made the development of a nuclear weapon easier than for many other threshold states. There is even more reason to emphasize the Swedish non-proliferation conviction - because it seems to be robust: When a Soviet submarine stranded in the Swedish archipelago in 1981 and it carried nuclear armaments, this was a major challenge to Swedish defence thinking. It is remarkable that a reopening of the nuclear option was not even suggested in the aftermath of the stranding. A Swedish nuclear bomb in this situation would have been technically possible but have high political costs. Still, it can be seen as a mystery why no one - not even from the liberal-conservative government that used to be strongly in favour of Swedish proliferation - even made the suggestion.

Research on a nuclear weapon started at a modest scale in 1945 and was soon expanded. By the early 1950s the research programme started to face some of the problems that were going to accompany it for its entire life time: There were different priorities and estimates of costs made by the sectors that wanted to develop nuclear energy and those which worked on the bomb. Moreover, an introduction of nuclear weapons in the Swedish defence would lead to a major redistribution of resources to the disadvantage of the navy and army. The technical and organizational problems were not so evident for outsiders. To them the general issue and its security political and/or moral implications mattered more. The public and political debates intensified during the 1950s and culminated in 1960. At first, the pro-nuclear voices had been strongest but they were soon challenged by interest groups, unions and peace movements.
After 1960, the public and political debates continued but with less vigour. A committee within the Social democratic government had established a compromise on how to handle the issue: Nuclear weapons research for the production of nuclear weapons would be terminated while research on the consequences of how nuclear weapons could affect Sweden if attacked would continue. It was a cosmetic decision that could cover for a continued research on a weapons design.

Nevertheless, there are some general qualities from the long debates that are indicative of why the outcome was eventually made manifest in the shape non-proliferation when Sweden signed the NPT in 1968. First of all, the number of interested persons, groups, movements and party politicians interested and engaged in the issue increased every time the issue came up. Secondly, the segments of society that supported the nuclear option remained roughly the same: The Supreme Commander, the National Defence Research Establishment (FOA) and the liberal and conservative parties. There were few strong movements or interest groups that rallied to the defence of this position. On the other hand, the anti-nuclear wing received more and more followers. Third, there was a marked tendency by virtually all actors (except the military and FOA) to include every sign of progress in international disarmament and non-proliferation efforts as arguments against Swedish proliferation: If the international community could reach progress, Sweden should not obstruct it.

Since 1968, the non-proliferation choice has been manifested through Sweden's adherence to the NPT and this has been accompanied by a strong commitment to other non-proliferation initiatives. In the national public debate, nuclear non-proliferation does not enjoy the same attention it used to do till the end of the Cold War, yet Sweden continues to be an active promoter of nuclear non-proliferation.
Sammanfattning


Det finns vissa genomgående drag i den allmäna debatten som indikerar, varför det till slut var icke-spridning som segrade och att detta cementerades med Sveriges underskrift av Icke-spridningsavtalet (NPT) 1968. För det första ökades kretsen av intresserade personer, grupper, rörelser och partipolitiker varje gång kärnvapenfrågan kom upp. För det andra var det i stort samma aktörer som stödde kärnvapenoptionen; ÖB, FOA, och de borgerliga partierna. Däremot var det inga stora folkliga rörelser som stod bakom denna åsikt. Å andra sidan var det flera och flera individer och rörelser som blev kärnvapenmotståndare. För det tredje fanns det en uttalad vilja hos nästan alla aktörer (utom militären och FOA), att acceptera framsteg i internationella nedrustnings- och icke-spridningsförhandlingar - om det internationella samhället kunde göra framsteg skulle inte Sverige förstöra detta.

Sedan 1968 har Sveriges val till fördel för icke-spridning varit manifesterad genom undertecknandet av NPT. Sverige har dessutom varit mycket aktiv i främjandet av icke-spridning internationellt. Efter det kalla kriget spelar kärnvapenfrågor en allt mindre roll i den nationella debatten, även om Sverige fortfarande har en viktig roll som icke-spridningsaktör.
1. Nukes in whiskey! Or, the robustness of foreswearance.¹

The Cold War and the deterrence dynamics established by the growing nuclear arsenals of the contending superpowers cast shadows of fear over all states in the East and West. Yet, in most cases nuclear weapons remained something very abstract and intangible to most people: Nuclear weapons were hidden in bunkers, vessels or aircraft and the full range of their destructive powers was beyond comprehension. It was only on television that the concerned citizen got a glimpse of a nuclear missile or a nuclear test explosion.

On a bright morning in October 1981, the Swedish public woke up to a more concrete exposure to the nuclear risks. A Soviet Whiskey-class submarine U-137 had stranded near the navy base of Karlskrona situated in the archipelago of southeastern Sweden. The incident received enormous attention by the national and international media and substantially cooled the relations between the Soviet Union and Sweden. There were many peculiar and intricate elements related to the incident; one of them being that all the uncertainties fostered did not re-open the debate on whether Sweden should pursue a nuclear option.

The stranded submarine was hardly the accident the USSR claimed it to be.² First of all, it had for years been suspected if not known that it to a large but hardly exclusive extent had been Soviet submarines that entered Swedish territorial waters. Now the U-137 could be seen as proof of the malign Soviet intentions and that the Soviet reference to the Baltic Sea as the “Sea of Peace” was only hollow and hypocritical. Secondly, it would have been virtually impossible for U-137 to enter the archipelago as far as it did with its navigation

¹ The author is a Ph. D. candidate at the Department of Peace and Conflict Research, Uppsala University. The present study constitutes in part one of four case studies for a Ph. D. thesis in process on the evolution of non-proliferation cultures in the Nordic countries, 1945-1995; a project that is financed by the Swedish Nuclear Power Inspectorate. Very helpful comments were made by Göran af Ekenstam and Lars Hildingsson from the Swedish Nuclear Power Inspectorate, Office of Nuclear Materials Control at a research seminar at the Department of Peace and Conflict Research, 18 August 1997. Thomas Jonter from the Department of History, Uppsala University, sent me elaborate written comments while he was a guest researcher at the Freie Universität Berlin, fall 1997. Jan Prawitz and Charles Parker from the Swedish Institute of International Affairs provided me with some critical views that I have tried to incorporate and Charlie even provided language editing. When this study was first presented at the conference on Non-Proliferation Pro-Activism convened by Dr. Harald Müller at Rockefeller Foundation Center in Bellagio, Italy, I received many helpful comments and recommendations from: Ambassador Miguel Marin Bosch, Mexico; Ambassador Jayantha Dhanapala, Sri Lanka; Associate Professor Etel Solingen, UCLA Irvine; Professor Thomas Risse, European University Institute; Director Dr. Harald Müller, Peace Research Institute Frankfurt; Associate Professor Scott Sagan, Stanford University as well as from my good friend Andrew O'Neil, Flinders University.

instruments in disarray as the official Soviet explanation framed it. The submarine would according to official Swedish statements have run aground much earlier.³

It was not only at sea that Sweden experienced violations of its territory. Towards 1980, it had become a daily routine that jet fighters were sent up to intercept intruding Warsaw Pact aircraft. This was related to the fact that detente had come to an end. NATO had decided to station a new generation of intermediate nuclear missiles in Europe, the SALT II Treaty had been buried for good, the Reagan administration was determined to get the upper hand in the arms race against the Soviet Union. Furthermore, the Soviet invasion of Afghanistan confirmed what many in the West thought were the Soviet’s true expansionist intentions.

From the outside of the submarine, experts from Sweden’s National Defence Research Establishment measured the ionizing radiation and concluded that there were between 10 and 20 kg of U-238 on board and this could conceivably only serve one purpose: As the tamper in one or two nuclear warheads in either a torpedo or mine.⁴ The Swedish insistence on verifying this through an onboard inspection was avoided by a Soviet response that in an indirect manner acknowledged the presence of nuclear weapons on board.⁵ The Soviet Union had in other words brought nuclear warheads to a neutral signatory of the NPT, in itself a grave fact that could cause a state to seriously question the benefits from being an adherent to the NPT and having abstained from developing a nuclear option. But if this was primarily a formal problem in terms of the relevance that could now be attached to international agreements, there were at least two very pertinent problems of a different nature. First of all, it was and remains unclear what the USSR wanted to achieve by the submarine intrusions. Various political and military objectives could have been at play ranging from a Soviet desire: To train their submarine crews under “real” conditions; to try to undercut and humiliate the Swedish neutrality and by implication expand the Soviet sphere of influence to the Swedish coast line; to

³ Whether U-137 was on an secret mission in Swedish territorial waters is still discussed. While there is good reason to assume that the Soviets generally conducted certain operations in Swedish waters, the concrete U-137 case does not as such give clear indications that U-137 also had such intentions.

⁴ Roland Gyllander, “Strålningen mättes genom skrovet” (The radiation was measured through the hulk), Dagens Nyheter, 7 November 1981; Bo Engzell, “10 kg uran i ubåt” (Ten kilo uranium in the submarine), Dagens Nyheter”, 11 November 1981.

⁵ Milton Leitenberg, op. cit., pp. 18-20.
make Sweden redistribute resources from its air and land defence to the naval defence so that a land invasion of Sweden would be easier; or to make preparations for warfare in which case the Soviet Union would want to make use of the ideal cover provided by the Swedish archipelagos.

Next to the uncertainty about what it was the Soviets wanted to achieve, there was a second major issue. For a decade or two, Sweden had along with its Nordic neighbours been engaged in discussions on whether and how a Nordic nuclear-weapon-free zone (NWFZ) could be established. All along, there had been many obvious obstacles in terms of the various different elements that each of the participating states wanted to see as a part of the Nordic NWFZ. There were differences regarding whether or not the Baltic Sea and the Kola Peninsula should be included and if there were to be a verification of the agreement. The Whiskey-incident made Nordic politicians and others aware of the very large number of nuclear warheads that existed in the Baltic Sea and not least on the Kola Peninsula. Between 3000 and 5000 of them could reach targets in the Nordic countries. If even submarines of the oldest Soviet type carried nuclear weapons on routine manoeuvres, this underscored the size of the menace and here small reductions would do little to alleviate the situation and give a Nordic NWFZ a meaningful content. Significant arms reductions were no longer thought of as a likely part of a Nordic NWFZ deal with the USSR.

Therefore, the focus was directed towards no-first-use guarantees as a more viable way of extracting concessions from the Soviets. The Soviet head of state Leonid Breznev had stated that if the Nordic countries proclaimed a NWFZ

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7 There are still no clear indications of what the Soviet ambitions were. After the end old the Cold war, former Soviet submarine officers have often been interviewed and some have stated that in the case of war nuclear armed torpedos would at an early stage be fired at Swedish naval bases in order to make the Swedish archipelago a safe area of operation for Soviet submarines carrying ballistic missiles. But this information is treated with some caution as it is uncertain whether commanders and crews of Soviet submarines were provided with information - or correct information - regarding their missions.

8 The Swedish attitude remained quite skeptical through the 1970s and early 1980s. Among the peace movements the Nordic NWFZ received much more positive attention; Sven Svensson, "Regeringen är skeptisk mot kärnvapenfri zon" (The government is skeptical towards the NWFZ), *Dagens Nyheter*, 25 February 1975; *Frankfurter Rundschau*, "Negatives nordisches Echo auf den Kekkonen-Plan" (A negative Nordic response to the Kokkonen-plan), 11 March 1975.

9 Peter Bratt, "Nu kommer de inofficiella siffrorna fram: Här är expertens bild av Sovjetvapnen" (Now the unofficial numbers are revealed: This is the expert's depiction of the Soviet weaponry), *Dagens Nyheter*, 21 November 1981.
they would be guaranteed against Soviet nuclear attack and in an interview with a German magazine he proclaimed that states free of nuclear weapons could receive a contractual negative security guarantee. Before the submarine incident, Sweden took up the issue twice in the Conference on Disarmament in April and June 1981 and asked whether she would not be entitled to receive negative security guarantees considering Sweden's neutrality and NPT adherence.10 There was no Soviet response.

After the stranded submarine had been released and it returned, the incident had left a mark upon the Swedish thinking about its defence. There was uncertainty about the Soviet motivations for the violations, the Nordic NWFZ as a step to improve the security in the region seemed futile in the shape it had been discussed11 and the Swedish wish to receive security guarantees from the nuclear-weapon states, and not least the USSR, had been met with arrogance and scorn. Nevertheless, this did not produce a situation where the Swedish nuclear weapons programme was revitalized in spite of the fact that it had only been abandoned less than 15 years earlier and for which large parts of the infrastructure and the research results still existed or could be reconstructed. A Swedish nuclear bomb would hardly have been very helpful against the dangers and the political costs of leaving the NPT could well have been considerable, yet such rationality cannot always be expected in stressful situations. But faced with the mentioned uncertainties, it is all the more remarkable that it was not taken up for consideration at all whether or not an abstract means of deterrence would help Sweden guard its sovereignty. When the Parliament convened to have the first debate on security policy12 after the submarine crisis no one questioned neutrality or the non-nuclear-weapons status. These two security political principles survived the challenge that the Soviet intrusion constituted. The only new military measure that was later decided on was a strengthening of anti-submarine capabilities.13 Moreover, it is important to note that the parties of the

12 Before the debate the Minister of Defence, Torsten Gustafsson, had stated to the press that Sweden of course had stronger sympathies with the West than the East in spite of neutrality. This was strongly condemned during the debate and almost forced the Minister to resign; Dagens Nyheter, "Ansvar och neutralitet" (Responsibility and neutrality), 4 November 1981.
liberal-conservative government in office in 1981 had only a decade or two earlier been among the strongest advocates of a Swedish nuclear weapon. In this hour when Sweden's sovereignty had been violated and its neutrality challenged no one seemed to be tempted to suggest a re-opening of the nuclear option. The Swedish forebearance of the nuclear option remained on solid ground.

2.: Debates on nuclear weapons issues.

In spite of Sweden's promotion of nuclear non-proliferation this was for more than two decades after 1945 only the one side of the coin. A nuclear weapons programme had been started immediately after World War II and allowed to grow though the research effort had never been furnished by a manifest political decision of developing the bomb. But Sweden also worked for disarmament and non-proliferation internationally and these policies of both seeking non-proliferation at the international level while working on a nuclear option has been characterized as both hypocritical, immoral, an expression of double standards - and as being wise and cautious. In a certain sense, the theme of double standards, hypocrisy etc. resounds even today in relation to Sweden's conventional weapons exports. The standard argument in favour of continued weapons exports is that Sweden's neutrality requires a national weapons production capacity and exports in order to keep the costs down.

Irrespective of how one choses to label the nuclear weapons policies, it at least has lead to a situation where the national debates have both a domestic and external origin. On most occasions, Sweden's own nuclear option was discussed, on other occasions it was the menace stemming from the nuclear arsenals of other states and alliances that caused concern and anger. Before giving a more detailed portrait of some indicative nuclear weapons debates, it is possible to point out four general features or qualities that will stand out from these debates. First of all, the propensity of supporting an indigenous nuclear capability rises when the group or number of groups that discuss the issue is small. Secondly, the number of voices that participate in the debate increases every time

14 The latter refers to the assumption that Sweden would only go nuclear if it became clear that non-proliferation and disarmament would remain fruitless. Sweden's former UN Ambassador Inga Thorsson stated in an interview that the former Disarmament Minister Alva Myrdal, in the 1960s, intended to use Sweden's nuclear weapons capability to get concessions from the great powers in disarmament and non-proliferation issues; Marianne Hjertstrand, "Alva Myrdal tänkte hota med kärnvapen" (Alva Myrdal thought of threatening with nuclear weapons) Dagens Nyheter, 27 April 1985.

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the issue is brought up. Third, the international efforts to reach agreement on nuclear disarmament and non-proliferation immediately enter the Swedish debate and strengthen the people, parties and movements arguing against a Swedish nuclear bomb. Forth, nuclear weapons are an issue that, on the whole, is unable to disrupt national sentiments once Sweden had made its decision to embrace nuclear foreswearance in 1968.

This does not imply that nuclear weapons in the general and international context become neglected. It only means that a widely accepted consensus prevails.\(^{15}\)

### 2.1. Approached from Abroad: The quest for Sweden’s uranium, 1945.

In July 1945, the Ministry for Foreign Affairs in Stockholm received the US delegate to Sweden. The message that was delivered was what the American characterized as a “cosmic secret”. The content of the message was so secret that the US delegate had been called to London to receive his instructions. Any other kind of transmission was thought of as too risky.\(^{16}\)

The USA was interested in the Swedish uranium deposits that were estimated to be the second largest in the world. This estimate had been made by a trust set up by the USA and UK in 1943 to buy or control as much of the world’s uranium as possible.\(^{17}\) Representatives from the trust had been able to collect samples and locate the uranium deposits and this was insight that had been gained already in 1944 through a cooperation between British representatives and researchers from the uranium trust and a Swedish mining and mineral company. What the trust had in mind was that Sweden would give concessions to the UK and USA for mining and utilization of the uranium for a thirty years

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\(^{15}\) By placing an emphasis on the debates on nuclear weapons and how they eventually amounted to a foreswearance of a nuclear option, this study departs from for instance a monography by Paul M. Cole, *Sweden Without the Bomb: The Conduct of a Nuclear-Capable Nation Without Nuclear Weapons*, Rand Corporation Santa Monica, 1994. Cole states that: There is no tradition of open debates on foreign policy details, debates drowned in Social democratic ideology, a foreign policy elite steers discussions and the government shapes rather than follows public opinion. “(A) debate over national security policy (...) tends to be problematic by American standards” (sic!), Paul M. Cole, *op. cit.* p. 95. It may well be that there are certain markers on the Swedish national debate culture, as there is in other states as well. Yet, Cole’s indicators for establishing the essence of public debates in Sweden are rather weak and few. If, instead, the focus is put on the nuclear weapons debates as such a different picture with the four characteristics mentioned above come to the fore.


period in return for Swedish access to certain civil nuclear technologies and cooperation.\textsuperscript{18}

At first there was much surprise at the Swedish Foreign Office that others seemed to have such a thorough knowledge of this Swedish resource. Simultaneously, it was puzzling what the USA and UK wanted the uranium for. Experts were soon able to explain the intricate connection to the Foreign Office officials and all mystique disappeared when the US dropped atomic bombs on Hiroshima and Nagasaki little more than a week after the first visit by the US delegate. The proposal was turned down by the Swedish Foreign Minister Östen Undén in September 1945. He stated in his reply that an agreement of such importance could not secretly be established between a few important Swedish ministers and the US government. This had been the formula suggested by the USA. A possible agreement would have to be discussed in the Parliament and passed as a law. Furthermore, the stipulations on how the USA intended to use the uranium ore would imply that the USA granted itself an authority beyond those of the newly established United Nations. This was the original wording suggested for the diplomatic note, though for the final version, the wording was softened as suggested by the American delegate\textsuperscript{19} - but the message and tone was

\textsuperscript{18} This particular cooperation between Swedish nationals and the US-UK uranium trust has not received much attention till recently. One source points out that it was the Swedish mining company Boliden AB that was involved (Wilhelm Agrell, "The Bomb That Never Was: The Rise and Fall of the Swedish Nuclear Weapons Programme" Nils Petter Gleditsch/Olav Njølstad (ed.) Arms Races: Technological and Political Dynamics. PRIO/SAGE Publications, London, 1990, p. 157). However, I have not been able to establish this relationship by interviewing a former employee of Boliden AB responsible for the geological research during the early post-war period.

In an in-depth analysis of the Swedish uranium issue and how this presumably influenced the making of Sweden's post World War II neutrality, Skogmar has recently cast light on many of the details on the basis of a very solid work with historical documents. The full length of the conclusions (that the approach by the UK and US in order to obtain a concession on the Swedish uranium deposits made Sweden chose neutrality) may well be disputed. Even from Skogmar's analysis is seems that the Swedish neutrality preference was already formulated by the Swedish foreign policy leadership. What the Anglo-American initiative did was at most to consolidate this choice. However, one of the many details in Skogmar's study is that it is a company (Svenska Diamantbergborrnings AB) affiliated with the Wallenberg family that cooperated with representatives from the uranium trust in order to determine the size of the deposits. This makes sense since one member of the Wallenberg family was also a member of the board of Norsk Hydro, that produced heavy water in Norway. Therefore, he was probably aware at this early stage that uranium could be an important strategic product for the future. Moreover, several of the Wallenberg companies had received attention by US authorities for the dubious role they played in cooperation with German companies during the war. There were thus good reasons for the Wallenberg company to get involved at this early stage; for the sake of making commercial gains on a future uranium market and restoring its reputation in the eyes of the Allies. Gunnar Skogmar, De nya malmfälten: Det svenska uranet och inledningen till efterkrigstidens neutralitetspolitik (The new ores: The Swedish uranium and the beginning of the post-war neutrality), Grafikerna i Kungsälv AB, Kungsälv, 1997, pp. 58-61.

\textsuperscript{19} Gunnar Skogmar, \textit{op. cit.}, pp. 49-51.
much the same. Instead, the Swedes countered that they would ascertain that there was total government control over uranium mining, processing and export wherefore the Swedish government could guarantee that the uranium did not diffuse to powers with dubious intentions.20

The USA tried to challenge this response and started negotiations without any concrete results. Soon after in the fall of 1945, two attempts to buy Swedish uranium were according to one source also made by the USSR but this was fruitless as well.21 But there was suddenly a new pressure on the government to deal with the matter in a more comprehensive manner and if anyone had cared much and the government had been more open about the matter, this could have made a public issue out of the strategic resources that Sweden suddenly seemed to hold. The government wanted to make a quick move. Instead of making a new law or regulation on uranium mining and handling, an existing law on cole mining was altered and updated22 so that the mining and processing of uranium would become the subject of government control and authorization. The matter was uncontroversial, since the approaches made by the great powers had not been revealed by the government. There was no media and public attention related to the passing of the law except for the sparse debate in Parliament over an issue which few persons outside the government saw as having any important ramifications.

2.2.: Discussed but not debated: Nuclear research efforts before 1954.

World War II had taught Sweden the lesson that neutrality could work if one were clever and had a good portion of luck. But there were also problems involved and one of them was that without the willingness to chose sides, it limited how many sofisticated weapons systems could be acquired from abroad. This had the implication23 that Sweden during the War had built up a considerable arms production capacity and to the fullest extent possible tried to

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20 Sverker Åström, *ibid.*
21 Christer Larsson, “Spelet om uranet” (The uranium game), *Nya teknik*, 19:1985, p. 10. Skogmar gives this aspect much attention but is unable to confirm an active Soviet effort to make a uranium agreement with Sweden. The Soviets probably had information about the attempts made by the British and Americans, yet the very early post-war years also witnessed a certain Soviet self-restraint in certain issues. Therefore, it is plausible that the absence of documentation on a Soviet initiative reflects that there were no such activities; Gunnar Skogmar, *op. cit.* pp. 61-63.
22 Lag om tillägg till lagen den 28 maj 1886 (nr. 46) angående stenkolsfyndigheter m. m.; 21 december 1945.
apply the lessons of modern warfare in order to be able to develop its responses.

The nuclear weapon was one such weapon of the new age that had to be investigated; if nothing else in order to understand what its effects would be in the case of an attack on Sweden and how protective measures could apply. As it turned out, the research efforts soon pointed beyond the stated defensive ones. In this process a number of agencies interacted and others were founded in order to create a comprehensive research structure and be able to assess the specific needs. This led to discussions among the various agencies and their representatives though it was not often said in a direct manner to the public what it was all about. In public documents, reports, and budget proposals, nuclear weapons were often referred to as "new weapons".

In 1944, the government had set up the National Defence Research Establishment (Försvarsmaktens Forskningsanstalt, FOA) to conduct the necessary technical military research. To a large extent based on reports from the Supreme Commander and from FOA, the Defence Committee suggested to the Parliament that the staff at FOA be tripled after 1947 and that the tasks related to nuclear weapons should be expanded. The estimate of how nuclear weapons would affect Sweden if attacked were not at all clear. On the one hand, it was thought that Sweden would be less vulnerable than many other countries due to the sparse population. Sweden's geographical size could also be counted as an asset as it allowed for detection of attacking aircraft and an effective air defence. However, it was also concluded that there were no ultimate conventional measures against a massive nuclear attack.24 Though this seemed to downplay the need for a Swedish nuclear option the Supreme Commander's report had argued how an inferior state like Sweden in the case of an attack could have defensive advantages from possessing and using even a limited number of nuclear bombs.25 FOA's preoccupation with the atomic weapon led to a division of the agency into a physics, chemistry and electronics section and as the Parliament had left it to the government to decide on the distribution of the military research funds, it was not hard to allocate a sizeable part to nuclear research.26

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1945, the government set up a parliamentary committee, Atomkommittén to estimate the needs for this research and advice the government hereon. One such advice was to build a company that could deal with the industrial aspects of nuclear technology. This was done in 1947 when the company AB Atomenergi was founded. It was mainly owned by the state but also by private share holders, primarily from the industrial sector.27

Year by year the Supreme Commander's emphasis on the necessity of a Swedish nuclear weapon became more and more outspoken and so did the reports from FOA on how quickly it could be completed. Some sizeable investments in a heavy-water plant, indigenous uranium processing and plutonium separation were necessary but this did not correspond with the allocation of funds from the defence budget to FOA. The intermediate solution was an agreement with AB Atomenergi in which the respective tasks for the common efforts were spelled out.28 This only partially solved the problem as AB Atomenergi had much more ballooning estimates of what the nuclear bomb would cost and at what pace it could be developed. It would take at least ten years from when the decision was made till it would be possible to produce between one and five bombs per year. The cooperation between AB Atomenergi and FOA only went well for a couple of years between its start in 1950 and 1953. Then second thoughts started to creep in at least on the part of AB Atomenergi and the parliamentary Atomkommittén. They questioned whether it was feasible to invest so many resources in the nuclear weapons programme considering the shortage of researchers and funds and that the private shareholders of AB Atomenergi might abandon the company if it turned out that the development of nuclear energy was sacrificed to the benefit of nuclear weapons.29

So far the nuclear weapons issue had been outside of the broader political and public limelight. It was discussed between a limited number of government officials, parliamentary members of Atomkommittén and the leaders from FOA and AB Atomenergi. The first brakes that were put on the nuclear weapons programme had to a large extent to do with the different emphasis that FOA and AB Atomenergi placed on the nuclear technological

28 Olof Forssberg, op. cit., pp. 16.
efforts. The fact that they had established a formal division of labour could not conceal the hard facts of scarcity and the cooperation did not by itself create a common aim and objective. So to a certain extent the competition between the two agencies was rather increased than reduced.


From the early 1950s and onwards the nuclear weapons issue gained attention with a tendency of involving more and more voices and polarizing opinion until an interim political compromise was reached in 1960. The debate was not always prominent in the Parliament, within political parties in the media and the various interest groups and peace movements; it was an issue that had its ups and downs in terms of attention. Prior to 1954, the situation had been rather uncomplicated, though the contours of potential problems were already there. It was considered possible to make the bomb, though the estimates of costs and detrimental effects on other sectors like the development of nuclear energy varied. The Supreme Commander favoured the option as did the Air Force Commander and the Minister of Defence. The Social democratic Prime Minister Tage Erlander had his doubts and Foreign Minister Undén was outright against it.30 Undén's position merits special attention because it was so encompassing and because it soon attracted so many followers who used one or more of his lines of argument.31 He argued that a nuclear bomb was of little or no strategic value to Sweden - it might even prompt an aggressor to a first strike to impede Sweden from completing the programme; and he believed that the possession of nuclear bombs were immoral due to the damage it would be able to inflict on innocent victims and the costs of developing and producing the bomb. Furthermore, he ridiculed much of the "nuclear talk", for instance limited nuclear exchange, the distinction between strategic and tactical warheads etc..

The public debate took a slow disparate start already in December 1952 when the Commander of the Air Force in a public address stated that nuclear weapons would have to be introduced. The statement prompted various government officials to deny that the issue was on the government's agenda at all, and the media was slow and disoriented with respect to the issue. The liberal

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and conservative newspapers at large would later come to favour the nuclear option and the Social democratic and socialist press was against but at this early stage opinions were not running along the right-left lines. However, it was not till one and a half year later that the debate was really ignited. In May 1954, Primeminister Erlander was asked during a parliamentary session how the hydrogen bomb developed by the superpowers was likely to affect Sweden. The answer in which he only stated that Sweden would have to protect its population against this category of weapons prompted comments where a Conservative MP envisaged that Sweden would need a nuclear deterrent of its own and where other Social democrats were against it. This was the first political discussion of the nuclear weapons programme but soon after other events fueled the debate. Two military journals printed articles in favour of the Swedish defence being equipped with nuclear weapons, and during a military exercise, a napalm bomb was used to simulate the effects of a nuclear explosion. Later in fall the Supreme Commander in his ten-years defence proposal to the government suggested that nuclear weapons be developed, produced or procured so that Sweden would not only have to submit to the dictates of the new weapon but could also enjoy its benefits. The Supreme Commander’s proposal was the first public document that contained an elaborate statement on the nuclear weapons issue but to Erlander it was inconvenient for the time being. There were elections ahead and the nuclear weapons debate might deepen the rift between a pacifist wing of the Socialdemocratis party and the one that favoured a strong Swedish defence. Instead the emphasis was put on nuclear energy. A parliamentary committee worked out a plan on how to develop nuclear energy in December 1955 and three months later the government presented a proposal to the Parliament. It remained untold in the proposal that the suggestion to use natural

32 Unless nothing else is stated the following is based on the synthesis of the nuclear weapons debate in the 1950s as presented by Ahlmark. The study based on 3000 sources is a very accurate description of the debate as it took place at various political and societal levels; Per Ahlmark, *Den svenska atomvapendebatten*, Utrikespolitiska institutet/Aldus Aktuellt, 1965.

33 Wilhelm Agrell, *op. cit.*, pp. 65, 204.

34 For an eight-year period from 1954, Sweden considered buying or leasing US nuclear weapons. However, this option did not receive much public and media attention as it mainly took place as a secret exchange of thoughts and wishes between Swedish and US diplomats and high-ranking officers. The plan stumbled due to an unwillingness by the US administration to specify under which conditions nuclear weapons could be acquired. Moreover, an official Swedish study in 1962 concluded that such arrangements would be in contrast with the objectives of neutrality. Paul M. Cole, *op. cit.*, pp. 36-41. To the extent that the press referred to the purchase option, it is unclear whether it did so based on information on the actual US-Swedish exchange or whether it was something that also others perceived as an option independent of what was going on behind closed doors. *Ibid.*, p. 37.
uranium from Sweden’s own uranium sources in heavy-water reactors was based on the military ambition to extract plutonium from the burned fuel. Nevertheless, the decision to develop a nuclear energy infrastructure made in 1956 was uncontroversial. On the other hand, the Supreme Commander’s defence proposal triggered more debate. It had suggested considerable changes of the organization and tactics of the armed forces with a view to the desire to make tactical nuclear warheads the corner stone of Sweden’s defence. As all political parties were involved in these discussions on the future defence plan, a discussion of nuclear weapons was inevitable.

Surprisingly, nuclear weapons did not become a central issue during the election campaigns in fall 1956 and the Suez crisis and the Soviet invasion of Hungary did not add much to the nuclear weapons debate viewed in isolation. However, it led the government to let the Supreme Commander update the defence plan and in January 1957 the real mobilization of emotions, arguments and voices started. The Director of FOA stated publicly that Sweden had the capability to produce a nuclear weapon within six or seven years provided that the decision to go ahead was made soon. The next day the Swedish Radio broadcasted a programme where among others Inga Thorsson, the chairperson of the Social democratic Womens’ Association gave her opinion on Swedish nuclear weapons. Six months earlier the congress of the Social democratic Womens’ Association had adopted a statement against the nuclear option, something which had passed in the media virtually unnoticed. Now, Inga Thorsson and her Association became one of the most influential actors in the debate. After Inga Thorssons radio presentation the debate intensified and

36 It was not till several years later that the relationship between the civilian and the military nuclear programmes were thought of as problematic; Bo Melander, “A-bomber skulle ge oss billigare ström” (Nuclear bombs were supposed to provide us with cheap electricity), Dagens Nyheter, 22 November 1978; Elisabet König, “Kärnkraften kopplades från början till atombomben” (From the very beginning nuclear energy was coupled with the nuclear bomb), Aftonbladet, 14 November 1978. However, US intelligence estimates already in 1960 foresaw that the double-track policy would have negative effects on both the military and the civilian efforts in terms of costs and time before the programme could be realized. The military programme would be slowed by the stress on energy production and the civilian programme would be inefficient compared to what could be had from using light-water reactors; Bureau of Intelligence and Research, Department of State, Intelligence Report no. 8221, “Swedish government initiates nuclear weapons programme”, 12 February 1960, p. 3.
37 Ahlmark calls 1957 the first essential debate year; Per Ahlmark, op. cit., p. 23.
38 Anna Ruding, Kampen mot atomvapen (The struggle against nuclear weapons), Tiden, Falun, 1975, pp. 26-30.
various politicians, writers, artists and journalists participated in the debate and often they had long newspaper dialogues. One example hereof was the debate between the former Ministers of Defence and Finance Per Edvin Skiöld and Ernst Wigforss (both Social democrats) who respectively argued for and against a Swedish nuclear deterrent.

The Supreme Commander's revised ten-years defence plan was presented in October 1957 and the ensuing debate was very much centered around it. This plan had an even more pronounced treatment and positive evaluation of the benefits Sweden's security could have from nuclear armament but nevertheless the Social democratic government managed to navigate through a defence budget that postponed a decision on nuclear weapons. The price for the compromise reached in February 1958 was a sharp increase of the conventional defence. This solution was intended to please all parties, but the effect was almost the opposite. The conservative and parts of the Social democratic press urged for a rapid decision as the increased budget would only make sense if it were known how nuclear weapons were to be integrated in the armed forces. Various individuals, unions and established peace groups also protested against the increased military expenditure and started to formulate more creative alternatives (increased focus on welfare and development aid) to the boosting of the military be it with or without nuclear weapons.39 Out of these protests grew another very influential protest group, AMSA, Aktionsgruppen mot svensk atombomb (The Action Committee Against Swedish Nuclear Weapons).40

So far, the debate had been principled relating to the pros and cons of an aquisition of tactical nuclear weapons and what good or bad they would do to Sweden. In October 1958, the Supreme Commander put a bomb under the discussions, so to speak, by requesting funding for continued nuclear weapons research at FOA. The Liberal and Conservative Parties were to a certain extent supportive of the request though they also wanted the military and the research establishments to keep a low profile and not create political turbulence. But turbulence was exactly what came out of it.41 There had at this stage been a

39 Zenit, "Arbetarprotester mot upprustningen: Socialdemokrater kritiserar regeringens politik" (Workers protest against the arms build-up: Social democrats criticize the government's defence policy), February 1958, p. 5; Ruth Bohman, Vi Kvinnor i fredskampen, (We women in the struggle for peace), Symposion AB, Stockholm, 1989.

40 Andreas Strömberg, "Fredsrörelsen vände opinionen" (The peace movement turned the opinion), Fax, no. 3, 1995, p. 11.

41 Wilhelm Agrell, op. cit., p. 164.
majority in the Parliament based on various fractions of most political parties (except for the Communist Party) in favour of an intensified research or even production scheme but this was now jeopardized. The request for research funding hardened the resistance within the Socialdemocratic Party as well as among members of other parties and movements against the nuclear option. The government refused to locate the funding as desired by the military and this led to an intensive debate where AMSA stressed pacifist arguments more and more. The polarization of the debate ended as Primeminister Erlander distanced himself from both the pacifist tendencies and those who discredited the existing defence by wanting a nuclear replacement of large parts of it.

In June 1959, the Social democrats had established a committee led by Erlander and Olof Palme on how the Party should deal with the nuclear weapons issue. The work of the committe was followed intensely and while it worked, more and more interest groups and organizations issued their statements for and against nuclear weapons. International events like the nuclear test ban negotiations played a role whereas the proposal made by the Soviet leader Khrushchev to create a nuclear-weapon-free zone in Scandinavia did not receive much support anywhere in Sweden. In November 1959, the Nuclear Weapons Committee submitted its report which struck a bargain between the wings of the Socialdemocratic Party and also was acceptable to the Liberal Party, the Centre Party and some parts of the Conservative Party. It was recommended that Sweden refrained from aquiring nuclear weapons considering the ongoing international negotiations on non-proliferation and disarmament. However, it was also recommended that research on protection against nuclear attacks should continue without continued research on weapons design. That the lines between the two were cosmetic was another matter - but also a matter that made it possible to span across the wide disagreements that had reigned hitherto.

2.4.: The active decision to forebear, 1968.

According to Agrell, the compromise reached in 1959-1960 meant the death of the nuclear weapons programme. The compromise extracted from the anti-nuclear wing of the Socialdemocratic Party could hardly be extended. Yet, the lid had not yet been put on the coffin. There were research and reactor facilities that had

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43 Wilhelm Agrell, op. cit., p. 165.
been completed and were being built with a view to also establishing the nuclear energy sector. The Ågesta reactor was finalized in 1963 and another heavy-water reactor at Marviken was underway in 1958 but not taken into commercial use upon its completion in 1968. Likewise, the plans to construct a reprocessing facility were abandoned in 1964. In 1960, the government had decided to start uranium mining at Ranstad but when the first operation tests were made in 1965, the world market prices for uranium had sunk to a level where Ranstad could not compete on commercial terms. In the early 1970s Ranstad was closed for good. Instead, an trade agreement with the USA for the import of enriched uranium was concluded in 1966 and thus the Swedish nuclear energy sector that established itself in the late 1960s and early 1970 was based on light-water reactors. Gone were thus the ambitions to create a complete nuclear fuel cycle including mining, heavy-water reactors, reprocessing and bomb manufacture. Instead, there were commercial gains to be made from nuclear trade and a light-water reactor design that also made the production of plutonium hard if not impossible.

But before this slowly became the outcome towards the late 1960s, the research at FOA had continued. It was hampered under the instructions to focus on protection against nuclear attacks and fall-out, yet there are also indications that some of these research efforts went beyond the government’s instructions. Simultaneously, there were plans developed between 1958 and 1964 to build nuclear-powered submarines. The plans never got beyond the design stage and were abandoned in 1964 as the new submarine class would drain to much of the Navy’s resources. There were also more and more signs of rifts within the military and the bureaucratic actors like FOA and the Supreme Commander became more and more isolated and unable to put nuclear weapons on the agenda. The Navy and Army showed increased reluctance towards how the Air Force would gain from a defence built on nuclear deterrence and the slow realization of the situation led the Supreme Commander to cut the funding for FOA in 1964. The public and political debate also continued but with much less vigour than through the late 1950s and most of the new arguments produced

44 Christer Larsson, "Historien om en svensk atombomb, 1945-1972" (The history of a Swedish nuclear bomb, 1945-1972), Ny Teknik, no. 17, april 1985. This publication created a major national debate on the Swedish nuclear weapons programme. In an official inquiry by the government it was concluded that FOA did not go beyond the instructions it had received from the government; Olof Forssberg, op. cit.


seemed to support the non-nuclear way. The Partial Test Ban Treaty (PTBT) in 1963 and the Swedish Foreign Minister Undén's proposal in 1961 at the UN to form an non-nuclear club against nuclear weapons were important steps to consolidate Sweden's nuclear weapons exit. In the early 1960s, the Parliament was from time to time confronted with questions and proposals that would rip up the consensus established in 1960. This was mainly done by the Communist Party which suggested that nuclear research even for protection against nuclear attacks and fall-out to be stopped. The Defence Committee of the Parliament and the Supreme Commander took up the issue but nothing new was added and the political parties seemed to pay less and less attention to it, albeit that their principled positions were unaltered. Inga Thorsson and the Socialdemocratic Women's Association continued to play an active role as did AMSA, and various unions reiterated their stands against nuclear weapons. The Undén plan received much attention in the media and the pros and cons in its global and Swedish context were discussed. On the other hand, the Kekkonen plan, the proposal by the Finnish President in 1963 to establish a nuclear weapons-free zone in the Nordic countries only received a cold response. It was thought of as too vague especially with respect to the obligations that would fall on the superpowers.

The clearest indication of how the tide was turning against a Swedish nuclear option can be read from the response to the PTBT. The superpowers signed it on 5 August 1963 and the next day the Standing Committee on Foreign Affairs of the Parliament discussed it and issued a communique stating that all parties supported Swedish adherence to the Treaty. On 20 November, the Parliament ratified the PTBT. In the press, the Swedish nuclear bomb was back again due to the new constraint that the PTBT put on a possible desire to test nuclear devices. It was stated by the government that, the PTBT would not make nuclear tests impossible but international disarmament and non-proliferation agreements were the prime parameters for Swedish nuclear weapons thinking.

Until 1968, the Swedish policy had been open in the sense that there had been no decision in either direction. The intention was to be in a situation with "freedom of action" as it was called. But the importance paid to nuclear weapons was steadily declining and they were supported by other international features. There were active negotiations on the NPT and a prosperous result was considered likely after 1966 and in 1967 NATO decided on a new nuclear

\[47\] Unless otherwise stated, based on Per Ahlmark, op. cit., pp. 135-145.

\[48\] Per Ahlmark, op. cit., p. 144.
weapons strategy, flexible response, by which it was thought that Sweden could avoid becoming involved in a nuclear war. In early 1968, the Parliament had long and heated debates over the defence budget for the coming four year period. During this period it was stated twice by the government that it was no longer considered in the security interest of Sweden to have nuclear weapons. In the media, there were heated debates over the defence plan and budget but even the most ardent proponents of growing expenditures and a strong defence did not suggest nuclear armament.49

2.5. The NPT and after.

When the decision was made to forego the nuclear option in 1968, most of the focus on nuclear weapons had shifted from Sweden’s own dealing with the nuclear weapons to concern over the East-West arms race in general.50 In many articles that discussed nuclear proliferation the “trouble” was related to other countries like Israel, South Africa, Taiwan etc.; there was an encompassing oblivion of Sweden’s one-time policy.51

With the first steps into non-proliferation taken between March and May 1968, it was less of a problem to pass the ratification debate of the NPT.52 Sweden signed the NPT on 19 August 1968 and had the ratification debate in the course of 1969. During the debate it was suggested by some of the members of the old pro-nuclear groupings to insert a Swedish reservation in return for the ratification. The proposal was that Sweden could chose to withdraw from the Treaty should it not have accomplished adequate nuclear disarmament towards the first review conference of the NPT. This proposal was rejected and Sweden submitted its instruments of ratification on 9 January 1970. However, it was not until January 1975 that the Swedish government accepted the safeguards document negotiated with the IAEA.53

49 Hilding Färm, “Avslöjande debatt” (Revealing debate), Folkbladet Östgöten, 7 March 1968; Stig Löfgren, “Försvarsprogram utan mål” (A defence policy without a goal) Svenska Dagbladet, 28 March 1968; Arbetarbladet, “Striden om försvaret” (The struggle over the defence), 24 May 1968, Östersunds-Posten, “Riksdagens forsvarsdebatt avslöjade regeringen” (The defence debate disclosed the government), 25 May 1968;
50 Andreas Strömberg, “100 000 byggde bro för fred” (100 000 built bridge for peace), Fax, no. 3, 1995.
51 Folket, “Civilisationen kommer att gå under om atombomberna utnyttjas i större mängd” (Our civilization will be exterminated if nuclear weapons are used at a large scale”, 6 November 1968; E. Bondeson, “Kärnvapenspår” (Nuclear weapons ban), Ny Dag, 25 March 1970.
This had earlier caused concern and was the object of a newspaper article in January 1973 and Inga Thorssson’s question to the Foreign Minister in Parliament later that month.\textsuperscript{54} The response was that Sweden wanted to await further progress in negotiations between other threshold states and the IAEA. However, it was added that the earlier bilateral safeguards agreement that existed with the USA, had according to an interim trilateral agreement, been taken over by the IAEA on 1 March 1972. The IAEA was in other words already implementing safeguards in Sweden on material and equipment of US origin. When a safeguards document was finally completed, the government stated that the delay had been caused by the prolonged safeguards negotiations between the IAEA and Euratom; Sweden did not want a safeguards agreement that differed from the one the EEC countries could achieve.\textsuperscript{55}

Other nuclear weapons issues entered the debate in Sweden before the aforementioned “Whiskey-affair”. In 1973, it was discussed whether the new generation of nuclear weapons called mini-nukes would change the character of the arms race and possible war scenarios. The debate had similarities with the debate on the neutron bomb which was discussed as a measure for the NATO defence in 1977. In the latter context the Director of SIPRI, Dr. Frank Barnaby stated that if NATO implemented neutron bombs, Sweden would maybe have to revise its decision to foreswear nuclear weapons. In both cases, the mini-nukes and neutron bomb debates, the government or high officials came out rejecting that there was a new urge to pursue a nuclear option.\textsuperscript{56}

Another issue that kept occurring in the national debate was a supposed link between nuclear energy and nuclear proliferation.\textsuperscript{57} If based on the history of the Swedish research efforts of the 1950s, this suspicion was well-founded. However, towards the mid 1970s when the debate flared it had little relevance since Sweden’s nuclear infrastructure was being placed under international

\textsuperscript{54} Riksdagsdebatt, Om inspektion av svenska kärnkraftsanläggningar, Torsdagen den 25 januari 1973.
\textsuperscript{55} Arne Karsberg, “Sverige avstår från kärnvapen” (Sweden refrains from nuclear weapons), Dagens Nyheter, 31 January 1975.
\textsuperscript{56} Axel Wennerling, “Försvarst härverkas inte av mikrokärnvapen” (Our defence is not influenced by mini-nukes), Dagens Nyheter, 6 February 1973; Dagens Nyheter, “Neutronbommen tvingar främst svenska kärnvapen” (The neutron bomb will prompt a Swedish nuclear weapon), 3 October 1977, Curt Jonasson, “Sverige kan inte tvingas skaffa kärnvapen” (Sweden cannot be forced to acquire nuclear weapons), Svenska Dagbladet, 3 October 1972.
\textsuperscript{57} Nils G. Åsling, “Kärnenergin och nedrustningen” (Nuclear power and disarmament), Politiskt tidskrift, no. 6, 1974; Lars Broan/Aadu Ott, “Svensk atombomb?” (A Swedish nuclear bomb?) Dagens Nyheter, 17 June 1974; Bo Aler, “Ingen svensk atombomb” (No Swedish nuclear bomb!), Dagens Nyheter, 5 July 1974.
safeguards. Moreover, the light-water reactors were unsuitable for nuclear weapons ambitions. The suggestion was made that Sweden would make a good non-proliferation example for the international community if it also chose to do without nuclear energy. In an interview, the former Disarmament Minister Alva Myrdal rejected the idea since Sweden did not have enough weight to count as a good example in this context. This supposed nuclear energy - weapons risk ceased to exist a couple of years later and played a miniscule role during the national debate before the referendum in 1980 on whether Sweden should continue or abolish its nuclear industry.

3. Sweden as a promoter of non-proliferation.

In spite of the more than two decades of active nuclear weapons research, Sweden also holds a long and persistent tradition of support and promotion of international disarmament and non-proliferation efforts. The debates on the Swedish bomb and other nuclear weapons issues were treated above but a short presentation of how non-proliferation and disarmament have been pursued in international fora illustrates some of the factors that even contributed as arguments against Swedish nuclear weapons in the national debates. Until 1968, Sweden had a double-track policy where both the nuclear weapons option and the non-proliferation possibility were pursued and investigated though with differing vigour at various stages. After 1968, non-proliferation was policy and master.

It was right from the outset of international efforts to control the atomic weapon that Sweden became engaged. There was strong support for the negotiations in the late 1940s within the UN and specifically the United Nations Atomic Energy Agency (UNAEC) of finding a way to place the existing US nuclear weapons under international control in return for all other states' pledge to refrain from the development of the weapons. Though these efforts remained fruitless and the UNAEC ceased its activities in 1949, Sweden became active in other supporting attempts to control or stop proliferation. It was under Swedish chairmanship of Dr. Sigvard Eklund that the first international Conference on the Peaceful Uses of the Atom was convened in Geneva in 1955. The conference served as a follow-up of the US President Eisenhower's "Atoms for Peace" speech.

and proposal to establish an international organization that gradually could take over the fissile materials from the USA and the Soviet Union and let it be used by other states for the production of nuclear energy.

When the International Atomic Energy Agency (IAEA) was established as the concrete result of Eisenhower's proposal, its competences and tasks could for political reasons not be implemented in accordance with the initial intentions. Sweden was a strong supporter of the IAEA and that it be given the powers it had according to the Statute. That the IAEA could not immediately solve the proliferation problems was evident and therefore various proposals were formulated by Ireland and later in 1961 by Sweden to the effect of establishing a non-proliferation treaty. During the NPT negotiations that lasted till 1968, Sweden played a most active role and when it is sometimes stated that the NPT is an "Irish baby" it also has to be said that Sweden is one of the Treaty's uncles or aunts.59

Since then Sweden has continued its staunch interest in and promotion of non-proliferation. In the late 1960s, Sweden joined an informal and secret multilateral cooperation on nuclear export controls with the USA, Britain, Canada and a few other states capable of exporting sensitive nuclear technologies.60 Sweden has continued this cooperation on export controls in the 1970s and 80s within the London Guidelines and after 1991 within the Nuclear Suppliers Guidelines, and at the national level strict export control regulations have been implemented and updated.61 For the prominent role Sweden attached to non-proliferation, the country's neutrality may well be considered to have been an asset. At least there were no considerations to be made in terms of what allied or neighbouring countries might think of the various non-proliferation efforts and proposals. To a large extent, Sweden's positions have received sympathy if not always support from other Western states and the credit to these policies is, maybe, most clearly reflected by the numerous chairmanships Swedish officials have held in various non-proliferation fora and that the two

60 Jan Prawitz, op. cit., 29-30.
61 For a more encompassing account of these efforts and how export controls have been updated, tightened and reorganized in recent years: Lars van Dassen, "Sweden", Harald Müller (ed.) Nuclear Export Controls in Europe, European Interuniversity Press, Brussels, 1995, pp. 181-206.
previous Director Generals of the IAEA are Swedish nationals. At the various Review Conferences of the NPT, Sweden more often than not played a highly idealistic role, and found itself having positions close to or with the Non-Aligned Movement. Much of this has changed or has at least been moderated since Sweden applied for membership of the European Union and became a member in 1995.62 There is still much left of the enthusiastic tone in the non-proliferation views but they are to a larger and larger extent adapted to and aligned with those of the other EU member states.63

If one were to paint with a broad brush, Sweden’s non-proliferation initiatives have often been marked by the formulation of new initiatives and proposals. This has been the case at NPT Review Conferences and at the IAEA but also within the First Committee of UN General Assembly and the Conference on Disarmament. During the negotiations on the Comprehensive Test Ban Treaty, Sweden played a very active role at all stages of the negotiations and not least is it fair to say that the negotiations were ignited because Sweden introduced a draft treaty text at the Conference on Disarmament in June 1993.

But non-proliferation activities also take place at the more practical levels. There is a special Swedish support programme for IAEA safeguards research and development and Sweden was a strong supporter of the initiatives made to strengthen the IAEA safeguards system in recent years. The improvements will grant the IAEA the right to interpret the safeguards agreement with member states in such a manner that the IAEA has the right to conduct special inspections, at locations not declared as nuclear facilities by the member state. Furthermore, the New Partnership Approach between the IAEA and Euratom has made the IAEA inspection activities in EU member states more

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62 During the NPT Review and Extension Conference, April - May 1995, it came to the fore how it was hard to align a Swedish tradition of enthusiasm and activity with the common non-proliferation objectives that the EU seeks to implement. Towards the end of the Conference, Sweden suggested the establishment of a time plan for nuclear disarmament to be part of the compromise parcel for the conference document. This suggestion could hardly be accepted by all the EU partners - especially because the proposal was misunderstood. The Swedish proposal was to establish a plan for nuclear disarmament within the next ten - fifteen years while most understood that it had to be implemented and completed within that period; Harald Müller/Lars van Dassen, "From Cacophony to Joint Action: Successes and Shortcomings of the European Nuclear Non-Proliferation Policy", Martin Holland (ed.) Common Foreign and Security Policy: The Record and Reforms. Pinter Press, London, 1997, pp. 65-66.

efficient. Especially the negotiations on the strengthened safeguards system have been problematic. The ambition was to add a new protocol to the existing safeguards document by which the IAEA may conduct environmental sampling, receive and require facility design information and other data it may find relevant in order to estimate the nuclear activities of member states. It was not easy to establish this "New Model Protocol". Among the EU member states opinions differed. Countries without nuclear industries strongly favoured the strengthened safeguards whereas most of the other states with nuclear industries, most notably Germany, France and Belgium opposed it due to the economic restraints that additional safeguards were supposed to cause. However, Sweden, together with Finland were the only EU countries with nuclear industries that fought for the New Model Protocol. These activities even included contacts at the highest levels between the Swedish and German governments before Germany and other EU members were able to accept the strengthened safeguards system.

After the break-up of the Soviet Union, Sweden has focused on the particular safety and proliferation concerns in the Baltic states and the CIS. Assistance has been provided for many projects and purposes, for instance the establishment of national export control systems in the Baltic states. A support programme has been set up and is implemented by a new unit, SIP, Swedish International Project Nuclear Safety affiliated with the SKI. Moreover, the government grants financial support and expertise to estimate the needs for managing the enormous military and civilian nuclear problems on the Kola Peninsula and at other nuclear facilities in Northern Russia. To improve this long-term objective that can only be carried out through cooperation between neighbouring states, the EU, the Barents Council, the IAEA and other actors.

4. Accounting for the turn to non-proliferation activism.
The Swedish nuclear weapons programme continues to attract interest among scholars and in the media. Every now and then, the issue comes up again with a certain sensational touch attached to it. Historical approaches are meaningful if they reveal something new of the past but if the objective is to create sensation

64 Göran af Ekenstam, "Forstärkt kontroll mot kärnvapenspridning" (Strengthened control against nuclear proliferation), Nucleus, no. 14, September 1997, pp. 26-27.
65 The Washington Post printed an article on the front page suspecting that Sweden could easily get back on the nuclear track. This was based on the erroneous assumption that the decommissioned reactor at Ågesta could easily be reactivated; S. Coll, "Neutral Sweden Keeps Nuclear Option Open", Washington Post 25 November 1994.
then it is totally overlooked what is the most pronounced fact; namely that Sweden did not develop nuclear weapons and can be counted as one of the most consciously convinced supporters of the NPT and non-proliferation norms. But it remains to be accounted for how this came to be the case. Proliferation and non-proliferation decisions do not come from nothing; states have various preconditions, traditions and orientations that apply for various specific contexts like for instance nuclear non-proliferation. The following is an attempt to extract which factors or variables influenced the course of events and shaped the final outcome: Non-proliferation assertiveness.

4.1. Sweden’s security political situation.

Since the beginning of the previous century, Sweden has chosen neutrality as its security political orientation. But this choice was a choice with reservations because it turns out that Sweden tacitly and implicitly was under the US nuclear umbrella and thus de facto belonged to a regional security framework and received security guarantees. The USA was eager to keep Sweden from proliferating and offered to cover Sweden with security guarantees. However, Sweden was to a certain extent in the NATO defence calculations already, if nothing else because it was the only way NATO could have depth in the defence of Norway. The contacts between Sweden and the USA on the issue were informal relating only to the situation when Sweden would be attacked. In that case neutrality would have failed and Sweden would see itself forced to make a different choice. However, it was an issue that hardly anyone beyond the highest levels of the military and the government was informed of and in the public debate it never played a role till after the end of the Cold War. If this de facto security guarantee explains anything then it is isolated to why the military’s desire for nuclear weapons disintegrates and evaporates in the early 1960s: The military leadership is aware of some kind of arrangement with the USA and therefore it is not necessary to push for an independent Swedish nuclear weapon.

Sweden has no long-standing regional enmities in the region just like there have not been any irredentist threats or ethnic tensions within the country. The border problems with respect to the Swedish-speaking island group Åland

66 In the following the concepts in italics denote these variables that for the project by Harald Müller tentatively have been identified as related to the non-proliferation outcome.

which wanted to join Sweden after Finland had gained independence in 1917 was solved by accepting a proposal by the League of Nations in 1921 to give Åland autonomy as a part of Finland. The main cause for Sweden's security political concern was the arms race and nuclear deterrence that existed between East and West and with Sweden in a very exposed strategic position in the middle. As such, Sweden was not in direct confrontation with either of the two blocks but left at the mercy of the dynamics between them. For many years, it was thought that the proper answer was to acquire a Swedish deterrent also. Later the conclusion was reached that this would not improve Sweden's chances of staying out of a nuclear war but rather increase the likelyhood of a direct nuclear attack.

4.2.: Sweden's foreign political culture.

Luck, skill and neutrality made it possible for Sweden to stay out of international conflict for such a long time that there are no national traumas that lead to resentments against particular states and peoples. Russia used to be the traditional enemy from the seventeenth till the nineteenth century but this relationship never figured as a prominent historical argument for Swedish nuclear armament.

In terms of hostility and sympathy for or against the great powers it was clear that Sweden politically and economically belonged to the West and never saw the USA or NATO as a threat to its security. The skepticism or at times hostility towards the Soviet Union originated from the Cold War era and the aggressive postures that this superpower displayed. For other reasons, Sweden also launched verbal and diplomatic attacks on the USA - especially over the Vietnam War. However, this was more an ideological issue; an offspring of the attempts by Prime Minister Olof Palme to put international justice on the international agenda. It was clearly the fear of the Soviet Union that was the driving force behind the perceived need to have a nuclear deterrent. It was not stated all too often but when the tactical and strategic benefits of nuclear weapons were discussed they were related to the case where the Soviet Union launched an amphibious attack on the Swedish shores.

The hierarchy of foreign policy values is hard to determine but there has not in the Cold War era been a fetish for power and status. Rather the

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68 It can be added that Sweden never spurred the Åland issue. In fact, when Sweden agreed to take up the issue, it was in order to accommodate the wishes of the people from Åland and not because Sweden wanted any expansion of its territory.
promotion of peace, development and economic redistribution were seen as means to alleviate conflict. This argument became increasingly used during the 1950s and 60s where Sweden also actively in the UN played this role of a good international citizen promoting peace and fighting oppression in the shape of, for instance, colonial rule and the Vietnam War. Swedish self-image goes hand in hand with recognition of the needs and desires of others and that it is a self-containing state in the sense that it has not pursued any territorial ambitions or had other conflict-prone ambitions in the affairs of other countries.

The attitudes towards military instruments are marked by Sweden's neutral status. The Swedish armed forces are designed for the defence of the country and beyond that only for international operations mandates by the UN. Nevertheless, Sweden has through the Cold War era had a considerable defence and was in the early 1960s considered to have the world's fourth or fifth strongest air force. The share of GNP for the military was always high, well above 5%. The reputation of the armed forces fluctuated considerably as did the willingness of people to serve and if necessary fight for the country. This became a hot issue in the late 1960s and 70s but it is interesting to note that opinion polls made in the late 1950s indicate that the willingness to fight in a war was much higher if Sweden is not equipped with nuclear weapons - even if the enemy threatened to use such weapons against Sweden. In other words, this can be interpreted as if the armed forces would retain a higher reputation if they were "clean", so to speak.

4.3. Sweden's foreign policy style.

The objectives thought important to Sweden have to a very large extent been pursued through international organizations. Neutrality made this the obvious way though there are also more fundamental attitudes behind preferring this process as national security is best preserved as common security. For the same reason unilateralism is never thought of as a viable way of dealing with foreign policy issues. If this portrays Sweden as a responsive actor in international politics it nevertheless has to be added that the modes of pursuing specific policies has been very assertive. The Swedish foreign policy and neutrality in this respect was characterized by one high ranking Swedish diplomat as the desire to be equally antagonistic towards everybody else - this in contrast to Finland - where the policy of neutrality was to be equally friendly with all other states.
International disarmament and non-proliferation negotiations constituted the fora where this emphasis in Sweden's policy was most visible.

4.4.: Political structure and domestic political values

Sweden is a constitutional democracy with freedom of speech, open access to the media and a considerable degree of openness even when sensitive issues such as national security are discussed. It is not a federal state but, there are distinct divisions of power, especially with respect to the powers that ministers have over their agencies. A minister cannot make administrative decisions but only issue general guidelines and regulations. Furthermore, Sweden has a very old tradition according to which citizens have access to information and documentation from the public authorities. The military's influence on politics has never been pronounced except that the recommendations made from the military would often count much due to their expert information. In spite of the openness and democratic structures, there was a long initial period when nuclear research was going on and when only a small group of cabinet members, researchers and leaders from the military were involved in the discussions. However, even nuclear secrets could not stay hidden from the broader public once the project matured. And when even FOA and the Supreme Commander started interfering in the debate this increased the anti-nuclear resistance. Even if there was no encompassing transparency of the nuclear research programme there were enough disclosures to raise the sentiments against it. In the 1950s, it is possible to trace how universalistic values and thinking about security and the world become more and more dominant in the debate over nuclear weapons. The mere fact that there is a debate seems to have created the attitude that security ought to be collective and development furthered.\(^69\)

The domestic values that can be said to have prevailed are first of all welfare, whereas environmentalism and postmaterialist values are of a more recent origin. The development of and attitudes towards nuclear power fit into this picture. In the 1950s and 60s there was great faith in the prospects and benefits from nuclear energy and therefore this was not questioned as the nuclear weapons programme was. Later in the 1970s, second thoughts entered the debate and they related to the proliferation risk and nuclear safety. The safety issue was the main concern after the Three Mile Island accident in 1979 and this led to a

\(^69\) Görel Bergman-Claeson, Vi svenskar, vi människor och bomben (We Swedes, we humans and the bomb), doctoral thesis, Institutionen för nordiska språk vid Uppsala universitet, no. 36, 1994.
referendum over continued use of nuclear energy in 1980. Nowadays, the relationship between nuclear energy and nuclear weapons is inverted from what it was thought to be in the mid 1970s in the sense that nuclear energy gives certain competences and institutions that contribute to promoting non-proliferation instruments at the international level.

5: Conclusion: From bomb-thinking to non-proliferation assertiveness?

Neutrality in the Swedish sense has been furnished with a conviction that the defence had to be based on the country's own military strength coupled with an effort to investigate the weapons development elsewhere and, when necessary, find independent responses to this when/if Sweden's security is endangered. Such threats were perceived to exist simply because of the East-West antagonism and because the Soviet Union constituted a direct threat. The suitable response was thought to be the absolute equalizer, the nuclear bomb, albeit that Sweden could never develop its arsenal in qualitative and quantitative terms as the superpowers did. There were maybe certain segments in the highest leadership of the military who perceived a nuclear weapon as an expression of Swedish power and glory whereas this hardly was the case in other parts of society. If there were favourable opinions of the bomb it was related to the perceived threats. At FOA, however, it is fair to say that the research to a certain extent took on its own dynamics. But neither of these two pushes: The technological and the status-related one, were able to carry very far once the nuclear intention and activity was revealed to the broad public.

There were international events that helped non-proliferation on its way; the PTBT, the NPT and flexible response but these things only matter if there is an alert public and elite that transfer them into favourable arguments. The more this debate progressed, the more obvious it became that nuclear weapons were hardly an asset but could be a menace as well. This corresponded with other general perspectives that the UN had to be strengthened and that common problems in the field of militarization and other spheres should have collective solutions. The nuclear bomb was thought of as an "unclean", immoral possession and that much more could be achieved nationally and internationally by focusing on welfare - and if necessary - conventional defence. Politicians and the government increasingly used the argument that the rest of the world would think very little of Sweden as an international citizen, should it proliferate.

28
Open political structures, with public and political actors who reacted against the nuclear option in spite or because of the insufficient information of what went on in the military and at FOA saved Sweden from proliferation. And because the world and principles of multilateralism meant something to Sweden and Sweden thought it could contribute to peace and stability in more constructive manners - there were arguments available for the anti-nuclear forces. It is hard to say how much the tacit nuclear umbrella that covered Sweden from the early 1960s mattered in all this. Very few knew of its existence and did therefore not include it in their calculus for or against.