

# The UK - Norway Initiative: Report on the UKNI Non Nuclear Weapon States Workshop (7-9 December 2011)

## Introduction

The UK and Norway, as signatories of the Nuclear Non Proliferation Treaty, are both committed to the long-term goal of a world without nuclear weapons. NPT Article VI requires all states parties to undertake to pursue “*negotiations in good faith on effective measures relating to... nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.*” Any future disarmament process would need to be underpinned by a verification regime that can demonstrate with confidence that nuclear disarmament has taken place. With this principle in mind, the UK and Norway have been working together since 2007 in a unique and ground breaking technical collaboration to address some of the challenges that verifying the dismantlement of nuclear warheads could pose. Specifically, it focuses on increasing the role of Non-Nuclear Weapons States (NNWS). Important progress has been made. The UK-Norway Initiative (UKNI) has brought together a Nuclear and Non-Nuclear Weapon State for the first time to discuss what verification tools and methods could be required to verify nuclear disarmament, and also to explore how all states parties to the NPT can contribute and cooperate to this end. The UKNI have presented the findings through technical papers, and presentations at NPT Preparatory Committees and the 2010 NPT Review Conference.

## Background

The UK-Norway Initiative is a collaboration between experts from Norway and the UK to investigate technical and procedural challenges associated with a possible future nuclear disarmament verification regime. This has included both technical development and a number of unique, ground-breaking exercises; important technical and procedural progress has been made.

Collaborative technical research on nuclear disarmament verification enhances transparency, confidence and openness, and advances progress towards the UK and Norway’s shared aim of the peace and security of a world without nuclear weapons.

Between 7-9 December 2011, the UK and Norway hosted a three day workshop which aimed to bring together Non-Nuclear Weapon States to discuss verification tools and methods needed to verify nuclear dismantlement, and to explore how all States Parties to the NPT can contribute to their NPT Article VI obligations. The workshop drew upon the results and methods from the UK-Norway initiative to date. It demonstrated how a Nuclear Weapon State and a Non-Nuclear Weapon State could work together to make significant contributions to nuclear disarmament verification research. It was also an important opportunity for the UK and Norway to gain feedback on their research progress to date.

Twelve Non-Nuclear Weapons States (NNWS) attended, along with the United States as subject matter experts on Arms Control Verification Research. Invitations were sent to those countries that had previously expressed an interest in the UK-Norway Initiative.

The Workshop programme covered both policy and technical issues. Technical topics covered included discussion of concepts such as managed access, information barriers and chain of custody (i.e. containment and surveillance). Broad themes were: the background to the Initiative, some of the joint exercises that have taken place, the creation of the Information Barrier technology and future steps for the Initiative. Technical and policy officials from Non-Nuclear Weapons States were invited. This included negotiators or inspectors involved in arms control regimes or nuclear safeguards, or those with experience as a facility manager with responsibility for controlling access of foreign inspectors to a sensitive site.

The UKNI committed to presenting this report at the meeting of the NPT 2012 Preparatory Committee for the 2015 Review Conference. It is the UK’s and Norway’s hope that the Workshop and this report will encourage new research initiatives and international collaborations.

## Objectives of the UK-Norway Workshop

The objectives for the workshop were:

1. Demonstrate how Non-Nuclear Weapon States and Nuclear Weapon States can work together to make significant contributions to nuclear disarmament verification research by showing that:
  - All States Parties to the NPT are able to make an active contribution to their Article VI disarmament obligations through verification research, whilst fulfilling their obligations under Articles I and II;
  - Non-Nuclear Weapon States' cooperation in nuclear disarmament verification research is necessary in order to achieve effective and mutually trusted technical and procedural solutions to support verifiable multilateral nuclear disarmament; and
  - Non-Nuclear Weapon States have an opportunity to make an active contribution to their Article VI disarmament obligations through nuclear dismantlement verification research before the 2015 NPT Review Conference.
2. To seek increased trust between Non-Nuclear Weapon States and Nuclear Weapon States stemming from:
  - Increased awareness and understanding of Non-Nuclear Weapon States of the technical complexities, proliferation concerns and further work required in addressing the verification of any future nuclear warhead dismantlement regime; and
  - Enhanced transparency and the building of mutual confidence through openness, cooperation, education and outreach.
3. To obtain constructive feedback on the UKNI from Non-Nuclear Weapon States.

The UKNI believes that the workshop successfully fulfilled these objectives. The slide packs used at the Workshop have also been made public separately. The following pages provide a summary of the outcomes of the discussion sessions.

## Workshop Format

Each day featured a number of presentations on different aspects of the Initiative, followed by an opportunity for discussion amongst the delegates. The Workshop sought to promote active participation through small working groups. Participants were encouraged to be prepared to discuss relevant tools and methods, both technical and non-technical, and also to think about how both Nuclear Weapon States and Non-Nuclear Weapon States can contribute to nuclear disarmament research using their own technical expertise. With this in mind, the UKNI arranged an informal poster and technical demonstration session to which states were invited to contribute; several states took this opportunity to present on technically relevant topics.

Day 1 of the workshop provided an opportunity for delegates to discuss the 'challenge' of nuclear warhead dismantlement verification. Discussion topics included:

- The scope of the UKNI programme.
- A generic facility concept.
- Host and Inspector viewpoints.
- The potential impact of security and proliferation concerns.

Day 2 looked at how the UKNI has attempted to address the technical challenges associated with nuclear warhead dismantlement verification. This was an opportunity for the delegates to offer feedback, ideas and perspectives on the current UKNI research programme, and discuss technologies which have an application within a verification regime. The following topics outlined and discussed:

- The planning, conduct and lessons learned from the 2008 and 2009 Managed Access exercise programme.
- The Information Barrier Project.

Day 3 was about future research. The objectives, conduct and new lessons learned from the 2010 Managed Access exercise were outlined. The broader lessons and challenges ahead in the

verification of nuclear disarmament were considered. Finally, delegates discussed the future direction of the UK Norway Initiative, and opportunities for the work of others.

Full details of the agenda, daily objectives and presentations can be found in the presentation pack to this report.

### **Workshop Outcomes**

Throughout the three days delegates were provided with opportunities to discuss topics relevant to the workshop.

The Initialisation Problem: This might be stated in various ways but for the purposes of the UKNI it is defined by the question “how can you ensure that what you are told is a warhead in a box, is really a warhead in a box?” The ability of an Inspecting Party to confirm this is always likely to be limited by the Host’s obligation to protect national security interests and both parties’ obligations to not proliferate weapon design information.

Declarations: Inspectors are reliant on the information provided by the Host, but as with the Initialisation Problem, the information is likely to be limited by national sensitivities and proliferation concerns. It was noted that ultimately, the more transparent a Host nation is (including national declarations about the nuclear warhead stockpile), the higher the confidence in declarations made during inspections is likely to be. This is a complex issue which will require considerable time to address; therefore early consideration by all states would be beneficial.

Confidence: A key objective for the Inspecting Party is to obtain evidence that the Host has complied with their treaty obligations. However, in a scenario where the Inspectors’ access to information and facilities is limited by national security or non-proliferation concerns, one hundred percent confidence cannot be achieved. The question discussed was “how much confidence is enough?” It was noted that this impacts at all levels from negotiation to equipment design and operation. A layered approach to confidence was discussed, where many elements contribute to an Inspector’s overall assessment of the situation. The UKNI has so far only addressed one part of the disarmament process, dismantlement, and even within this limited remit many technical and procedural challenges still remain to achieving ‘verification with confidence’.

Host/Inspector Relationship: The differing perspectives and priorities of the Host and Inspecting Party are a potential source of friction. Although a successful inspection may be a priority for both parties, the need to protect nationally sensitive and proliferative information will place limits on facility access and the information that can be shared. On the assumption that both sides have an incentive for the regime to succeed, clearly agreed requirements and objectives should help to create a framework within which the inspection can proceed. Within the UKNI it has been found that a proactive Host helps to facilitate the process and increase Inspector confidence. It was also felt that an open dialogue, where questions can be asked, would help to facilitate a negotiation process and mitigate against misunderstandings resulting from false assumptions. Despite the competing objectives described above, it was believed that a shared outcome should be possible. Exercises can be particularly good for promoting a discussion of these issues. Delegates stated that forums like the UKNI workshop were very helpful to explore these issues in more detail.

National Security and Non-Proliferation: Concerns over national security and non-proliferation permeate through the whole of the inspection process. It was noted during discussions that non-proliferation is not simply a concern but is a treaty obligation. Communicating the impact of national security and non-proliferation obligations in the context of verifying nuclear weapon dismantlement is difficult but, as the UKNI has demonstrated, possible, whilst still complying with NPT Articles I and II.

Delegates were asked to give **feedback**, ideas and perspectives on the current UKNI research programme.

General Feedback: Delegates commented that the scenario developed within UKNI was ‘realistic’ when compared with experience from other ‘real world’ regimes, but it was also noted that real world regimes may present a more hostile environment in comparison with the cooperative scenario discussed by UKNI. Both Inspectors and Host have an incentive for the regime to

succeed since failure would reflect badly on the overall process and might adversely effect the international reputation of the Host. This point of view was evident in the discussion sessions and as a key learning point from the UKNI.

Exercises: The programme of exercises was viewed as an effective way of identifying new issues, exploring scenarios and minimising the risk of failure in the future. But it was noted that the application of different cultures/background/personalities/experiences could yield different results. There was some discussion on the possible involvement of a third party (e.g. NGOs) in the inspection process but no conclusion was reached.

Information Barrier: This was recognised as an important technology requiring further development as this would allow measurements of treaty relevant items while still protecting nationally sensitive or proliferative information. The UKNI instigated a 'step-by-step' approach to information barrier development which promoted a mutual understanding of the technology and issues, whilst ensuring that non-proliferation obligations were met (see presentation in supporting pack).

During the discussion sessions a number of **broader themes** were also covered.

Designated or dedicated facilities: The question arose, would dedicated facilities mitigate the national security or proliferation sensitivities? It was noted that a dedicated facility might help to facilitate the process however many technical issues would still remain, as would restrictions relating to proliferation and national security concerns. It was recognised that the existing facilities of potential hosts were not designed with inspections in mind and that such inspections could inhibit routine operations. The possibility of carrying out a cost/benefit analysis for a bespoke facility was considered. It was recognised that the cost was highly likely to be prohibitive.

Language, culture and understanding: It was noted that these factors could have a major impact on an inspection regime and even on the outcomes of an exercise. The fact that Norwegians are highly skilled in the use of the English Language was considered to be a positive factor in the success of the UKNI. Even when working in a common language it was recognised that different interpretations might exist for a single word or phrase and that establishing common definitions was key. Developing a glossary of relevant terms/concepts for nuclear warhead dismantlement verification might perhaps be a useful task for the future.

Lessons from other regimes and organisations: This was highlighted as an area that the UKNI might benefit from studying further to ensure that all possible lessons had been learned. Examples included ABACC, IAEA safeguards procedures, CWC, CTBT-OSI managed access and New START.

Credibility of any future regime with the international community: It was generally acknowledged that any future inspection regime to verify dismantlement of nuclear warheads could only be successful if it had political buy in. Furthermore, several states thought that NNWS engagement would be essential if it was to be internationally credible and transparent. It was recognised that all States Parties to the NPT have an obligation under Article VI to contribute to the development of verification regimes but that active NNWS engagement in the inspection process brought both benefits and risks. There was widespread acceptance that major technological development is still required to produce jointly trustable systems for deployment in the verification of nuclear warhead dismantlement.

## **Summary**

There was widespread acceptance that major technological development is still required to produce jointly trustable systems for deployment in the verification of nuclear warhead dismantlement. Collaborative disarmament verification research will be necessary in order to achieve effective and mutually trusted approaches and solutions to support any possible future multilateral disarmament regime. It was also highlighted that the issue of Inspector and Host confidence requires much greater consideration. How to define it, how to measure it and most importantly, how to establish what can be considered sufficient in the context of verifying the dismantlement of a nuclear warhead.

The technical focus of the UKNI still represents an effective means of advancing the UK and Norway's shared goal of a world without nuclear weapons. The UKNI workshop was an important opportunity for education and outreach on disarmament verification research, and helped to enhance the transparency of the Initiative. The workshop provided NNWS with the opportunity to peer review and influence the future direction of the UKNI.

It was recognised that all States Parties to the NPT have an obligation under Article VI to contribute to the development of verification regimes but that active NNWS involvement in the inspection process brought both benefits and risks. Many NNWS saw their involvement as essential if the verification regime was to be internationally credible and transparent. The UKNI has demonstrated that successful and productive collaborative verification research is possible between Nuclear Weapons States and NNWS, whilst still fulfilling NPT Articles I and II.

### **Next steps for the UKNI**

The requirement for future work was discussed from two perspectives, firstly the next stage of the UKNI technical collaboration was presented and discussed, and secondly delegates were asked how they thought the broader international community might be able to contribute to the field of nuclear warhead disarmament verification. Next steps for the UKNI mean that it will:

- Remain a bilateral technical cooperation between the UK and Norway.
- Continue testing and developing the joint Information Barrier system and will look to develop the procedures for trusted deployment.
- Continue development of the verification process based on lessons learned from the UKNI exercises.
- Strive for a better understanding of Inspector/Host confidence referring initially to its experience of the previous UKNI exercises.
- Undertake focussed exercises as required to explore the above issues.
- Look to other international regimes to ensure that any and all potential lessons are properly assimilated.
- Continue to report progress on the margins of the NPT Preparatory Committees and Review Conferences, together with presenting technical updates to appropriate professional fora.
- Endeavour to encourage and advise any new initiative in this field that may request it.

Discussion on the wider engagement by the international community was interesting and a number of key points emerged:

- NNWS have an active role to play in verification research and engagement is a way of meeting commitments under Article VI of the NPT.
- NNWS could get involved in the technical development process and such involvement could add real value.
- Academia and NGOs could also make a significant contribution.

Overall, all delegates felt that the UKNI Non Nuclear Weapons States 2011 Workshop was useful and increased the level of understanding of the challenges all NPT states face under Article VI.