

BUILDING CAPACITY IN SAFEGUARDS THROUGH TRAINING, DIALOGUE AND RESEARCH

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Abstract

The Vienna Center for Disarmament and Non-Proliferation (VCDNP) serves as a hub for training, results-oriented dialogue and impact driven research on nuclear non-proliferation issues, particularly on so called “Vienna issues” such as nuclear safeguards. Since its opening in 2011, the VCDNP has collaborated closely with the International Atomic Energy Agency (IAEA) and its Department of Safeguards to build States’ capacity in working on safeguards issues both in diplomatic missions in Vienna and national capitals, including through its biannual flagship short course for diplomats and practitioners in the nuclear field on nuclear non-proliferation and disarmament. Since 2019, the VCDNP has also held specialised courses on IAEA safeguards and nuclear security with a view to providing more targeted training in these areas, as well as to highlight their intersections with one another. For all of these courses, the primary target audience has been developing countries, and gender parity is given priority in the selection of participants.

The VCDNP also engages in dialogue and research in the area of safeguards. For example, the VCDNP convened a three-part workshop series between April 2019 to November 2020 focused on ways to strengthen safeguards and export controls (as well as highlight their complementarities) in managing new challenges posed by advanced and emerging technologies. The VCDNP’s research on safeguards is primarily driven by the need to equip Member States with the most accurate, comprehensive and relevant information possible so as to promote informed decision making. This research is presented in various forms, including issue briefs, analytical studies, public seminars and webinars, and others as required. The paper describes the VCDNP’s work in training, dialogue and research surrounding IAEA safeguards and the intersections with other domains, as well as offers lessons learned to inform current and future efforts in this regard.

1. INTRODUCTION

The Vienna Center for Disarmament and Non-Proliferation (VCDNP) was established in 2010 at the initiative of the Austrian Foreign Ministry as an “international hub of expertise” on nuclear non-proliferation and disarmament. [1] The Center first opened in 2011 and has since served as a hub for capacity building on nuclear issues, impact-driven research and results-oriented dialogue. In this work, the VCDNP works closely with the diplomatic community in Vienna and the international organisations, including the International Atomic Energy Agency (IAEA) and the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), to maximise its impact on the global non-proliferation regime.

The paper includes an overview of the three pillars of the VCDNP’s work – capacity building, research and dialogue – as well as lessons learned by the Center in its more than 10 years of operation.

2. CAPACITY BUILDING FOR DIPLOMATS AND PRACTITIONERS

The VCDNP's education and training activities have been at the core of its mission since its founding. Since the Center opened, it has trained over 700 diplomats and practitioners in nuclear non-proliferation and disarmament.

In 2018, the VCDNP was recognised for its contribution to non-proliferation capacity building in UN General Assembly resolution 73/73. The VCDNP was the only non-governmental organisation mentioned in the resolution along with the IAEA, the CTBTO, the Organisation for the Prohibition of Chemical Weapons, the Organization for Security and Cooperation in Europe and the International Court of Justice. [4]

2.1. Flagship Course on Nuclear Non-Proliferation and Disarmament

The VCDNP's flagship intensive training course for diplomats and practitioners in the nuclear field takes place biannually and covers a broad spectrum of issues in nuclear non-proliferation and disarmament, including: the non-proliferation regime; the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and its review process; disarmament machinery, historical developments and recent disarmament initiatives; nuclear energy and the nuclear fuel cycle; nuclear safeguards, security and strategic trade controls; nuclear arms control historically and today; the peaceful uses of nuclear science and technology; nuclear-weapon-free zones; regional case studies; and the work of the international organisations in Vienna. [2] From its first course in 2011 through May 2022, the VCDNP has held 23 such courses. In all of its activities, the VCDNP places priority on gender parity and the involvement of developing countries; 45 percent of participants in the flagship course have been female and 73 percent have been from developing countries.

During the flagship course, special attention is paid to IAEA safeguards and the important role they play in the verification of States non-proliferation commitments under the NPT. The course's substantive sessions with a focus on safeguards include lectures on: safeguards history; a detailed overview of different types of safeguards agreements and protocols; an overview of safeguards planning, implementation and evaluation in the field and at headquarters; demonstrations of safeguards equipment; and tours of IAEA safeguards facilities and the Incident and Emergency Response Centre. As many of the participants in these courses are new to the nuclear subject matter – and many posted to diplomatic missions in Vienna – the focus on safeguards and engagement with the IAEA aims to increase Member States' capacity working with IAEA matters. Indeed, in the anonymous evaluations at the end of each course, many participants have commented that the course, and these particular lectures, assisted them during the General Conference and meetings of the Board of Governors. In addition, the VCDNP maintains an online preparatory module of resources related to the topics covered during the course, including safeguards, which many alumni have commented they return to after the course as a reference. [3] Following the start of the COVID-19 pandemic, the VCDNP opened the module as a public resource.

2.2. Specialised Courses

In 2019, the VCDNP began to expand its training activities to include specialised courses, including a course on "Safeguards for Policymakers: What You Need to Know." The specialised safeguards course, as well as a similar course on nuclear security, was the result of engagement with the IAEA based on feedback provided by the VCDNP's primary constituency, i.e. the Vienna-based diplomatic community. While course alumni had previously noted the positive impact the flagship course had on their capacity to perform effectively in multilateral nuclear fora, many also said that it would be helpful to study safeguards matters in more depth. With extensive cooperation from the IAEA's Department of Safeguards, the VCDNP has held two safeguards courses with another course forthcoming in 2023.

During the intensive programme, participants engage in sessions specific to safeguards, including on the evolution of safeguards and their place in the global non-proliferation regime, an overview of the planning, implementation and evaluation of safeguards, as well as the application of safeguards in practice. The course also highlights the experiences of States in implementing safeguards, and as such also includes sessions on legislative assistance and best practices in the operation of nuclear regulatory bodies and State systems for accounting for and control of nuclear material, as well as services and advisory missions offered by the IAEA. Finally, participants are offered detailed information on technology and tools used for safeguards implementation in order

to improve participant's understanding of the different resources available to the IAEA and the State when applying safeguards.

As noted, to measure the impact of the courses and the trajectory of participants' careers, the VCDNP conducts an anonymous questionnaire at the end of each course, both flagship and specialised. Following the safeguards courses, participants have expressed some of the following views (quoted as written):

- "Really found it useful how safeguards was approached from all angles; policy, legal and technical implementation perspective."
- "Since I am covering all IAEA dossiers, of course this course helps to understand more of the work at the IAEA. I think this is important for a diplomat."
- "This course was useful for our national implementation activities for [the] Additional Protocol."

Another specialised course conducted by the VCDNP was a three-day mini-course for newly arrived Vienna-based ambassadors held in 2021 at the suggestion of several ambassadors based in Vienna. The programme offered a condensed course exclusively at the ambassadorial level taking note of ambassadors' busy schedules. The course offered an opportunity to expose incoming ambassadors to the nuclear topic that is part of their Vienna profile as well as provide a networking opportunity for ambassadors to meet one another. Finally, the VCDNP has held three courses under the auspices of the EU Non-Proliferation and Disarmament Consortium aimed at bridging the knowledge gap between technical experts and policy experts at the graduate and post-graduate levels, targeting students in information technology, engineering, chemistry and biology. Both types of these additional specialised courses included lectures on safeguards, tailored to the audience as appropriate.

3. IMPACT-DRIVEN RESEARCH

In all of its research activities, the VCDNP aims to provide independent analysis and recommendations on non-proliferation and disarmament to inform policymakers and result in concrete policy outcomes. As its key constituency is the Vienna-based diplomatic community and international organisations, the Center has conducted a number of projects on safeguards issues, recent among them:

3.1. Maximising The Effectiveness of Safeguards Outreach and Preserving Institutional Memory

Director General Rafael Mariano Grossi has renewed and intensified the IAEA's calls for States with outdated small quantities protocols (SQPs) to amend or rescind them, as appropriate, as well as for States that have yet to conclude additional protocols (APs) or bring their comprehensive safeguards agreements (CSAs) into force to do so. In order to encourage States to bring CSAs into force or conclude APs, and to amend/rescind their SQPs, many outreach events, publications and consultations have been conducted by the IAEA, individual States and groups of States. While these efforts are important, they would benefit from additional coordination on outreach and customisation of such outreach to the legal, social and other State-specific circumstances.

In this regard, the VCDNP is engaging in a project that aims to produce recommendations for the IAEA, States and groups of States to implement more effective, coordinated, and strategic outreach activities on safeguards. The VCDNP will conduct extensive interviews with Member State representatives that have recently taken action on their country's safeguards status and analysis of the drivers that led them to do so. The project is ongoing and is expected to produce a final report in early 2023.

3.2. Governing the Atom Brief Series

While the VCDNP often conducts larger-scale research projects that yield lengthy reports, it is sensitive to the fact that diplomats often have busy schedules that involve handling multiple portfolios, sometimes covering all of the activities of the IAEA rather than just safeguards, or even multiple international organisations. Oftentimes, such individuals require short, easily digestible materials to help understand the nuances of complex problems without having to do extensive research.

To serve this need, the VCDNP produces smaller materials like fact sheets and briefs. One recent example is the Governing the Atom Brief Series, which are short publications that provide the essential information about an issue and are written with a policy angle. The first Governing the Atom Brief focused on amending or

rescinding outdated SQPs, including the reasons why doing so is in the interest of the State concerned, the process for doing this, challenges experienced by some Member States and ways to mitigate those challenges. The first Governing the Atom Brief was published in 2022 and more briefs in the Series are forthcoming. [5]

3.3. Reflecting on the Annexes to the Model Additional Protocol

The year 2022 marks 25 years since the Board of Governors approved the Model Additional Protocol. An additional protocol based on the model provides the IAEA with more tools to verify the absence of undeclared nuclear activities or material in a State, such as expanded reporting requirements, including (but not limited to) those outlined in the Model Additional Protocol's two technical Annexes. A quarter century on, the pace of technological advancement along the nuclear fuel cycle has increased, but the provision in the Model Additional Protocol to update the Annexes has yet to be invoked.

Recognising the importance of the Model Additional Protocol's 25th anniversary, the VCDNP carried out a project in 2021-2022 providing an analysis of technologies that are not covered in the Annexes but could still be considered significant in terms of safeguards planning, implementation and evaluation. The resulting report included 12 case studies of particularly compelling examples of technologies not covered under the Annexes.

The purpose of the project was to identify gaps in the Annexes that could significantly improve the planning, implementation and evaluation of safeguards, should the update provision in the Model Additional Protocol be invoked by the Board of Governors. [6]

4. RESULTS-ORIENTED DIALOGUE

Another important pillar of the VCDNP's work is to serve as a convener of various stakeholders to have open and results-oriented dialogue without the politically driven statements that can sometimes dominate intergovernmental international fora. These discussions provide an opportunity to reach across traditional divides and break silos to have meaningful exchanges on nuclear issues. This line of work is especially impactful in a setting where stakeholders can have confidence that discussions are not-for-attribution and off-the-record.

This can include hosting events at the behest of the missions in Vienna, private briefings for diplomats on current issues, track 1.5 dialogues and other meetings as illustrated below.

4.1. Diplomatic Workshop on Vienna Issues

Ahead of the Tenth NPT Review Conference, the VCDNP and the James Martin Center for Nonproliferation Studies (CNS) held a high-level diplomatic workshop in Vienna. The workshop, attended by over 50 senior diplomats, heads of international organisations, and experts, focused primarily on the non-proliferation and peaceful uses pillars of the NPT. Workshop participants discussed key challenges in these areas, their potential impact on the debates at the Review Conference, and opportunities for progress.

Three common threads emerged during the workshop discussions:

- Unity among NPT States Parties on nuclear safeguards, security, and peaceful uses can have a positive impact on the deliberation at the Review Conference and its outcome.
- NPT States Parties should refrain from trying to renegotiate what has already been agreed in Vienna regarding safeguards, security, and peaceful uses. It is therefore important that Vienna-based missions actively participate in the Review Conference delegations or are closely consulted in the course of the negotiations.
- While the Review Conference cannot dictate what the IAEA and its Member States decide on safeguards, security and peaceful uses, its outcome is important for how these issues are treated in Vienna going forward.

The workshop gave Vienna-based ambassadors, many of whom attended the Tenth NPT Review Conference on behalf of their governments, a chance to engage in productive, closed-door dialogue on the role of Vienna issues in the NPT review process and exchange views on how progress could be achieved. [7]

4.2. Dialogue on Safeguards, Export Controls and New and Emerging Technologies

Between April 2019 and November 2020, the VCDNP held a three-part workshop series with a view to strengthening the synergies between nuclear safeguards and export controls, in particular to manage new challenges posed by advanced and emerging technologies. An additional aim of the workshops was to strengthen communication among the safeguards and export control communities, considering their mutually reinforcing aims.

The workshops brought together more than 50 experts from the IAEA, nuclear supplier governments, industry and research institutions to examine nuclear and nuclear-related technologies that have not been comprehensively reviewed and addressed by existing nuclear governance regimes, as well as technologies that are not nuclear-related but that have potential impacts on nuclear safeguards and export controls. The workshops covered a wide range of technologies, including but not limited to advanced reactors, accident-tolerant fuels, additive manufacturing, cloud computing, artificial intelligence and distributed ledger technologies. Participants also discussed the impact of these technologies on regulators, industry, safeguard inspectors, and export control compliance officers. With a view for future actions, the final workshop produced a recommendation paper, which included the promotion of the development and adoption of codes of conduct for additive manufacturing, and enhanced partnership with industry on safeguards and export controls. [8]

4.3. Dialogue on the Nexus Between Nuclear Governance and Peaceful Uses

Nuclear security and safeguards do not exist in a vacuum; rather, they are essential parts of the global nuclear landscape along with the peaceful uses of nuclear science and technology. In this connection, the VCDNP has been running a project since 2018 with the aim to promote better understanding of the sustainable use of nuclear and other radioactive materials for peaceful purposes, as well as to build bridges between countries' views on nuclear governance. It facilitates a better understanding among IAEA Member State representatives on nuclear security and safeguards, enhances awareness of the interplay between nuclear safety, security and safeguards, and stresses the mutually reinforcing nature of technical cooperation and nuclear governance. It also provides increased opportunities for constructive engagement between Member States and the IAEA on nuclear governance issues.

As a part of this project the VCDNP has convened 14 panel discussions and workshops since 2018, as well as conducted public webinars and published numerous case studies, reports and fact sheets. These activities have contributed to a better understanding among IAEA Member States on nuclear security and safeguards being integral to peaceful uses instead of a competing priority, and has directed more attention to the peaceful uses pillar of the NPT. [9]

5. LESSONS LEARNED

The VCDNP has been conducting capacity building activities, impact-driven research and results-oriented dialogue for more than a decade. In the course of this work, the VCDNP has learned important lessons on ways to maximise the impact of its work in order to promote policy objectives.

5.1. Understanding the Added Value of Non-Governmental Organisations

The non-proliferation community has seen a great increase over the past decades of non-governmental organisations that focus on nuclear issues. There has also been increased openness by the international community to rely on the expertise of and engagement with non-governmental experts, and include them in high-level discourse, such as in the NPT review process. The VCDNP has learned that, in order to maximise the impact of non-governmental organisations on nuclear discourse, one must understand the value they add. In international fora, Member State representatives are often bound by the instructions and policy guidance of their governments. Their statements are carefully crafted in order to reinforce often long-standing policy positions. In the same vein, international organisations work at the service of their Member States and must be diligent not to adopt political positions of their own; indeed, they must be sure to avoid even the perception of politicisation.

Non-governmental organisations can address policy issues and promote the strengthening of the non-proliferation regime – including the safeguards system – in a way that neither Member States nor international

organisations can. In its research activities, the VCDNP is able to speak out on important issues and provide fact-based and comprehensive research on matters that could be viewed as politicised if raised by a Member State or international organisation. The VCDNP's Governing the Atom Brief Series, factsheets and reports all offer independent analysis for stakeholders without being viewed as political or self-serving. As concerns capacity building, the VCDNP offers a unique mixture of lecturers and speakers from various backgrounds and organisations in order to ensure that participants gain a balanced view of critical issues. This applies to the VCDNP's courses, public seminars and webinars, as well as workshops.

The VCDNP's dialogue activities epitomise the added value of non-governmental organisations to nuclear discourse. Discussions, such as the ones held under the workshop series on safeguards and export controls would be immediately politicised if held under official auspices. However, when convened by a trusted and respected non-governmental organisation, governments, industry and international organisations alike are able to speak more freely and more productively with an aim to produce actionable outcomes. In this regard, the VCDNP's convening power has become one of its greatest assets and its political neutrality and independence highlighted as an important aspect of its work.

5.2. Aligning Stakeholder Interest with Independent Expertise

The importance of aligning stakeholders' individual interests with independent expertise has been amply demonstrated in all three lines of the VCDNP's work. Its capacity building activities are the first example of this in which the VCDNP's flagship course on nuclear non-proliferation and disarmament is a way to promote informed decision-making by diplomats representing their countries at the international organisations in Vienna, Geneva and New York as well as in capitals, ultimately strengthening the global non-proliferation regime. The course on "Safeguards for Policymakers: What You Need to Know" is an example of the VCDNP adapting to meet the needs of diplomats in Vienna and officials in capitals who work on safeguards matters in order to provide a more in-depth understanding of how safeguards are planned, implemented and evaluated.

In terms of research, the Center looks to the needs of its constituents to determine how its research can help realise policy objectives. The VCDNP's project on "Reflecting on the Annexes of the Model Additional Protocol in Support of Nuclear Governance," conducted 25 years after the Board's approval of the Model Additional Protocol, was designed to capitalise on the significance of the anniversary of the Model Additional Protocol in step with IAEA Member States' interest in updating the Annexes. Similarly, the alignment of interests and objectives has been important in the VCDNP's dialogue activities. The ongoing project on nuclear governance and peaceful uses of nuclear science and technology has led to the Center becoming a recognised contributor on peaceful uses, including convening a Task Force on Peaceful Uses whose work was presented at the Tenth NPT Review Conference. [10]

In the VCDNP's experience in nuclear non-proliferation and disarmament, the principle of aligning stakeholder interest with the Center's expertise is perhaps the most important. It has enabled it to have a tangible impact on the decisions taken by diplomatic missions on safeguards. For example, following one of the VCDNP's flagship courses, one diplomat became a "safeguards champion" for his country; inspired by a session on safeguards history, he took his own initiative to go to capital and work to get his country to amend its SQP.

5.3. Developing Partnerships with Key Constituencies

Developing strong partnerships with governmental bodies, international organisations and other non-governmental organisations is another characteristic of the Center's work. Since opening in 2011, the VCDNP has engaged extensively with these key constituencies to build cooperation, trust and good will.

Because of this, the VCDNP has a reputation as a hub for non-proliferation expertise and as a "neutral ground" and is often approached by national governments and international organisations alike to organise, host and contribute to high-level discussions. For example, at the request of several Vienna-based ambassadors, the Center hosted a virtual, expert-level discussion on naval nuclear propulsion and the application of IAEA safeguards following the announcement of the AUKUS partnership.[11]. The virtual event was held with a view to improving the Vienna diplomatic community's understanding of the safeguards implications of a nuclear-powered submarine programme, particularly the related legal provisions of States' safeguards agreements.

Owing to the relationships it has cultivated, the VCDNP also often hosts and participates in closed-door meetings at the behest of national governments, international organisations and other non-governmental organisations alike with the understanding that the discussions be off-the-record and focused on productive engagement. The three-part workshop series on safeguards and export controls mentioned above is an example of this.

The relationships the VCDNP has cultivated are symbiotic; not only is the VCDNP in a position to assist its key constituencies in their work by providing independent expertise and its convening power, but VCDNP experts also benefit from engagement with national governments, international organisations and other non-governmental organisations. In turn, this engagement leads to stronger analysis that feeds into nuclear discourse, resulting in mutually-reinforcing relationships that support the global non-proliferation regime at large.

6. CONCLUSIONS

The paper includes just a few takeaways from the VCDNP's experience in maximising positive impact on discourse in the nuclear field. As the landscape of the nuclear field continues to change, the VCDNP will continue to adapt its work to best meet the needs of its constituents and stakeholders through capacity building, impact-driven research, and results-oriented dialogue.

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