Building a Diverse, Equitable, and Inclusive Nuclear Security Culture

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Abstract:

Since the first days of the Manhattan Project, access to careers and knowledge relating to nuclear issues has been gatekept, preventing the participation of historically marginalized groups, including women, people of color, queer communities, and others. This historic exclusion of marginalized groups has been acute in security-related fields, including nuclear security. In recent years, research has shown the negative impacts of these policies and the need for supporting diversity, equity, and inclusion (DEI) in the nuclear security field.

DEI are a critical element of a strong organizational culture, which means they are also central to a strong nuclear security culture. DEI are also necessary for fostering excellence and retention in the nuclear security field overall. While some organizations and governments have begun taking muchneeded steps to make nuclear roles more accessible to a diverse range of qualified individuals, the effectiveness of these measures and the depth of support raises questions as to the sustainability of these efforts and their ability to create long-term change. Moreover, diversification must be coupled with steps to create equitable and inclusive organizational environments.

While high-level support for DEI exists, statements of support are not the same as action. Institutional DEI policies that are implemented from the top-down can largely overlook the important socioeconomic contexts and root causes that have created exclusionary nuclear security environments. Furthermore, greater research and education are needed to underscore the importance of DEI as a central element of nuclear security culture.

To critically examine the effectiveness of current DEI measures to improve representation in the nuclear security field, this paper will explore how DEI policies can strengthen nuclear security, critically assess high-level approaches to DEI in the nuclear security field, identify barriers to implementation, and propose potential solutions for improving DEI approaches at the international level.

Introduction

In a world of rapidly evolving threats that can span international borders, all organizations responsible for protecting against the theft of nuclear weapons, weapons-usable nuclear material, or nuclear sabotage must provide and sustain a high level of security. One of the internationally recognized keys to accomplishing this goal is the development of a strong organizational culture focused on security. A strong nuclear security culture—meaning the beliefs, attitude and behaviors of staff related to protecting nuclear facilities —is foundational to nuclear security. When major nuclear security implementation failures occur, they can often be attributed to failed security culture.¹

An organization with a strong security culture is one where personnel responsible for nuclear security believe in threats, understand the risks they pose, and are motivated and empowered to take action to

mitigate those risks by proactively identifying security vulnerabilities and identifying strategies for addressing them. Much has been written in recent years about how to develop and sustain a nuclear organization with a strong security culture, but this is a difficult task. In organizations where leadership and security personnel can sometimes go their entire careers without facing a major threat, complacency can be commonplace.

Even when organizational leadership supports the development of a strong security culture, they still must create an environment where personnel have committed to excellence and are invested in a process of continuous improvement. There is a strategy for achieving this goal that is just beginning to receive appropriate attention: fostering diversity, equity, and inclusion (DEI) within nuclear organizations. A growing body of organizational management research focuses on how institutions made up of personnel with different experiences and backgrounds, who are all given fair chances to succeed, and are actively engaged in the process of organizational improvement can produce better outcomes than largely homogenous organizations, where some employees are marginalized and not provided with opportunities to succeed in the workplace.² The conclusions and lessons from this research can and should be applied to nuclear security implementation.

Although data is sparse, there is evidence indicating that organizations responsible for nuclear security tend to be homogenous. A 2021 survey estimates that 24.9% of the nuclear energy sector are women.³ Another study found as of 2020, only five percent of the U.S. National Nuclear Security Administration (NNSA) security forces responsible for securing weapons grade nuclear material were women.⁴ Furthermore, only about 33 percent of the NNSA's total workforce self-identify as members of historically under-represented groups, and members of "underrepresented minorities" and "other people of color" together made up about 32 percent of the combined workforce of the 17 National Laboratories in 2022.⁵ Developing nuclear organizations that are not only diverse, but also equitable and inclusive, will require leadership, commitment, and sustained effort.

This paper will first describe what DEI each mean within the context of nuclear security. It will then make the case for why DEI are critical elements of nuclear security culture. It will identify recent multilateral efforts focused on strengthening DEI within organizations responsible for nuclear security. Finally, it will propose action items for further developing this burgeoning sub-field of nuclear security.

Defining Diversity, Equity, and Inclusion

DEI are frequently misunderstood concepts. When they are used, they are often applied within the context of social justice movements or industry and not specifically applied to nuclear security implementation. Thus, establishing a baseline understanding of what DEI means within the context of nuclear security is essential.

Diversity refers to "who is represented in the [nuclear] workforce," including characteristics like gender, race, age, physical ability, or socioeconomic status.⁶

Equity speaks to "fair treatment for all people, so that the norms, practices, and policies in place ensure identity is not predictive of opportunities or workplace outcomes."⁷ This takes into account the unique circumstances faced by an individual in their endeavor to enter the nuclear security field, their

experience working in the field, and ensuring that their treatment is tailored to their needs, instead of a "one-size-fits-all" approach.⁸

Inclusion examines "how the [nuclear security] workforce experiences the workplace and the degree to which [nuclear] organizations embrace all employees and enable them to make meaningful contributions."⁹ Inclusion in this context means examining if all employees feel that their voices are heard, contributions valued, and concerns taken seriously.¹⁰

Understanding the need for DEI in nuclear security requires an understanding of the biases that historically marginalized groups and minority communities face in the field. Biases, such as those held on the basis of gender or race, often result in certain groups facing unfair treatment due to preconceived assumptions and confirmation bias. In other instances, groups or individuals who have characteristics similar to those in power or decision-making roles receive preferential treatment due to affinity bias. The case of the Sellafield Nuclear Power Plant in the United Kingdom, where allegations of sexist and homophobic bullying received international attention, illustrates how bias – and the subsequent unfair treatment, exclusion, and homogeneity – causes nuclear safety and security that are firmly rooted the toxic organizational culture at the facility.¹¹ These biases can produce recruitment, retention, and advancement challenges for personnel, which further exacerbates exclusion issues in the field and creates serious nuclear security vulnerabilities that must be addressed.

Characteristics of a DEI Nuclear Security Culture

There is now a well-established business case for the value of diverse, equitable, and inclusive work environments. Organizations with a diverse work force draw from a larger recruitment pool and, thus, are more likely to hire top talent. A diverse workforce can be more capable of identifying different strategies for strengthening nuclear security, identifying potential vulnerabilities, and having their ideas and potential solutions considered and acknowledged by organizational leadership.

Equity and inclusion are essential pieces in harnessing the potential of a diverse workforce.¹² An organization responsible for nuclear security that prioritizes all three of these concepts equally is one that not only recruits and hires employees with different life experiences and ways of thinking, but also provides them all a fair chance to succeed, and creates opportunities for personnel to improve nuclear security operations. "DEI tends to bring an openness to new ideas and places an emphasis on listening, which is central to creating an organizational culture in which personnel feel empowered to share ideas for improving security operations."¹³ Furthermore, "an equitable work environment in which personnel feel included is also likely to breed higher employee satisfaction, which in turn, improves performance."¹⁴

DEI could potentially be important for identifying and mitigating certain kinds of insider threats.¹⁵ If nuclear facilities fail to protect personnel from abuse, hostility, or incivility on the basis of race, gender, sexual orientation, or any other characteristic, they create a toxic workplace in which individuals are less likely to share concerns.¹⁶ Toxic organizational cultures can yield negative experiences and negatively impact employees in a variety of ways including "elevated levels of anxiety, stress, depression, health issues, absenteeism, and burnout." This, in turn, may compromise an institution's efficiency, productivity, and reputation.¹⁷ Not only could these factors impact how a guard force operates and the process by which organizations identify and mitigate potential security vulnerabilities, but they can also

even produce insider threats.¹⁸ Creating a security culture and an organizational culture where employees feel that complaints or concerns about other personnel, particularly those related to racism, sexism, or homophobia, will be taken seriously, and processed without repercussion, can improve the retention and performance of all employees.¹⁹ Specific improvements will especially be seen in retention rates of historically marginalized groups.

"Diversity can help address homogeneity in the workforce composition, equity can curb unfair treatment by reducing the impact of existing societal inequities on opportunities for advancement and growth for nuclear security practitioners, and inclusion can foster an open-minded nuclear security culture and expand a facility's shared understanding of potential nuclear security threats."²⁰ Collectively, these principles can improve nuclear security implementation and even prevent disgruntled employees from becoming insider threats.

International organizations have not yet explicitly endorsed DEI as important elements of nuclear security. International Atomic Energy Agency (IAEA) best practice guidance, however, alludes to the importance of inclusivity as an element of nuclear security culture. IAEA Nuclear Security Series No. 7 focused on Security Culture identified that "*All personnel* [emphasis added] must be made aware of and be committed to nuclear security requirements and best practices" and "the quality of a decision is improved when the individuals involved are able to contribute their insights and ideas."²¹ Certainly, the idea of inclusivity is implicit within this international guidance.

Role of Stakeholders

A strong organizational culture that prioritizes DEI must be supported international, national, organizational leaders and supported by those implementing policies on the ground. Each of these stakeholders plays a critical role in strengthening nuclear security culture.

Diplomats

Diplomats and high-level figures in international and multilateral organizations have long played leadership roles in advancing nuclear security by publicly talking about its importance, announcing new state-level commitments, and supporting implementation of these commitments nationally. These traditional roles would all be important elements of incorporating DEI into nuclear security implementation.

Governments and Regulators

Governments and regulators are responsible for implementing national commitments, developing tailored state-level standards, and tracking and reporting progress. They also create the rules that govern how nuclear organizations implement nuclear security. Support from governments and regulators would be necessary for incorporating DEI into nuclear security implementation.

Organizational leadership

Nuclear organizations, whether part of government or industry, are most directly connected to security implementation and responsible for developing security culture that prioritizes DEI. Ultimately, it will be up to implementing organizations, whether part of industry or government to develop a culture that views DEI as a security asset and the lack thereof as a vulnerability.

Practitioners/Individuals

Every person involved in nuclear security implementation, from organization leadership to members of the guard force, is responsible for their organizational culture. Individuals are responsible for executing at a high level and for identifying risk factors relating to personnel behavior at facilities and characteristics relating to exclusionary or discriminatory behaviors, flagging threats.

International Support for DEI

One of the keys to spreading nuclear security best practices around the world is political leadership. Governments, international organizations, and industry leaders must make both moral and policy arguments for the value of developing policies that promote DEI within nuclear organizations. These statements help to strengthen the case for DEI and normalize it as a practice within nuclear organizations.

International leaders have made important high-level statements supporting DEI as an element of nuclear security in recent years. One of the first statements supporting DEI was at the 2020 IAEA International Conference on Nuclear Security (ICONS), where ministers from 53 countries agreed to a statement promoting, "geographical diversity and gender equality, in the context of IAEA's nuclear security activities, and encourage Member States to establish an inclusive workforce within their national security regimes, including ensuring equal access to education and training."²² An even stronger message emphasizing diversity and equity came out of the 2022 Conference of the Parties to the Amendment to the Convention on the Physical Protection of Nuclear Material (A/CPPNM) where 106 different Parties agreed, "The Conference reaffirmed the importance of diversity and inclusivity, including gender equality, within nuclear security workforces and national physical protection regimes, including capacity building through ensuring equal access to education and training." The March 2023 IAEA Board of Governors Meeting also spoke to DEI, noting, "The Group reiterates the need for the Agency to uphold the principles of equitable geographical representation, workforce diversity and gender mainstreaming in all its activities. In this regard, the Group emphasizes the importance of the Agency continuing to support the participation of experts from developing countries, with a special focus on gender mainstreaming, particularly in the Safety Standards Committees, the Nuclear Security Guidance Committee, as well as the Interface Group."²³ The strongest and most explicit statement connecting DEI to nuclear security came from the United States during the March 2023 IAEA Board of Governors meeting, "[developing] States' human resources is necessary to prevent nuclear terrorism and strengthen nuclear security...no field or profession should be out of reach to women-including nuclear security and the entire nuclear sector. Diverse teams and workforces...are essential if we are to have the necessary talent and resources to tackle complex nuclear security challenges before us."24

These statements are important starting points for encouraging a dialogue about how DEI, or the lack thereof, can impact nuclear security implementation, but more work is needed by international leaders within government and international organizations, industry, and civil society. The connection between DEI and nuclear security implementation needs to be made between high-level meetings, incorporated into capacity building, and day-to-day nuclear security implementation. There will be other opportunities for statements connecting nuclear security implementation with DEI, like the upcoming 2024 IAEA International Conference on Nuclear Security.

Civil Society Tools for Advancing DEI in Nuclear Security

Civil society actors have played a crucial role in advancing DEI by identifying gaps in representation in the nuclear field and placing emphasis on the structural causes of exclusion and discrimination. While considerable focus has been placed on the nuclear policy field's challenges and the specific issues of gender representation, many of the existing tools and platforms can still serve to advance DEI for nuclear security practitioners. These institutions are all U.S.- or Western-based, which means that more thought is needed how to internationalize some of these concepts.

World Institute for Nuclear Security (WINS). In 2022 the WINS debuted its *Advancing Gender Equality, Diversity and Inclusion in Nuclear Security* self-assessment, evaluation and action plan tool for organizations working in the nuclear sector.²⁵ The tool provides best practices for assessing an organization's culture for characteristics that ensure that the women and gender diverse individuals that are hired, thrive at the organization, and are retained in the long term. An organizational culture that reflects core DEI principles is an essential precursor to developing a DEI nuclear security culture.²⁶

The WINS guide, *Advancing Gender Parity in Nuclear Security*, also serves as a helpful resource for promoting women in nuclear security. It advocates for diversifying the workforce "by design," arguing that advancing women promotes innovation, performance, talent, and diversity of views strengthens nuclear security and profitability for nuclear organizations.²⁷

Gender Champions in Nuclear Policy (GCNP). GCNP is a leadership network founded in 2018 that brings together heads of organizations working in nuclear policy who are committed to breaking down gender barriers.²⁸ GCNP includes institutional heads of organizations who address nuclear nonproliferation, nuclear weapons policy, nuclear disarmament, nuclear security, nuclear deterrence, nuclear energy, and other related topics to building networks, skills, mentorship, visibility, voice, and community among women working in the nuclear policy field.²⁹ GCNP's *Panel Parity Pledge*, in particular, serves as an effective means through which to combat single gender panels.³⁰

Women of Color Advancing Peace and Security (WCAPS). Founded by Ambassador Bonnie Jenkins in 2017, WCAPS creates a network of programs, chapters, and working groups for primarily U.S. girls and women of color dedicated to advancing peace and security.³¹ In addition for providing an international and intersectional perspective on how diverse candidates strengthen peace and security, WCAPS also features a CBRN Security Policy working group that produces publications that examine the structural causes of exclusion and discrimination in the nuclear policy field, and subsequent challenges that apply to nuclear security and the broader nuclear field.³² Further, WCAPS founded OrgsinSolidarity, an organization dedicated to advancing Black women in U.S.-national security field by focusing on the root causes of disproportionate and historically rooted discrimination preventing their participation in hard security spaces.³³

Out in National Security (ONS). Visible LGBTQIA+ representation within organizations responsible for strengthening nuclear security has been lacking. ONS is "dedicated to empowering queer [U.S.] national security professionals.³⁴ While drawing attention to a broad range of national security areas, participation and focus on queer nuclear experts has helped normalize the notion of LGBTQIA+ folks as nuclear experts in both the policy and security spaces. Advancing LGBTQIA+ participation is important because of the unique perspective that the queer community brings to nuclear security work. In particular, members of the queer community have a long history of having to 'code-switch' and

assimilate to heteronormative environments.³⁵ This social dynamic has led queer nuclear security experts to reflect on how their queerness has supported their ability to read and adapt to different environments – an awareness that could help strengthen security culture objectives and peer observation.

Recommendations

Creating organizations that prioritize DEI can strengthen nuclear security implementation by fostering a stronger security culture, but changing these norms around the world requires long-term and sustainable plans. The following recommendations are essential first steps that nuclear security practitioners in government, international organizations, and civil society can take to advance DEI in nuclear security.

Diplomats and International Organizations

Strengthening Public Statements from International Leaders. Diplomats should develop language around workforce composition, fairness, and participation that is globally applicable and relevant. Consensus documents should include a strong statement supporting DEI and its relevance in nuclear security culture. It should also endorse clear and measurable targets for member states to diversify their nuclear security workforce.

Developing International Guidance. The IAEA should develop guidance on implementing diversity, equity, and inclusion within member states' nuclear security regimes. These concepts should also be included within relevant existing guidance, like the Nuclear Security Series. Such guidance can be essential to creating benchmarks for progress and creating strategies for integrating DEI into nuclear security culture. This international guidance should then be incorporated into all IAEA nuclear security capacity-building initiatives.

Championing DEI Programs. The IAEA has launched programs to advance women in the nuclear field at several levels, such as the Marie Skłodowska-Curie Fellowship and the Lise Meitner Program for early-mid career professionals. The IAEA and member states need to continue their work on initiatives that support hiring, retention, and advancement of diverse candidates for nuclear security roles, but with a more intersectional understanding of diversity—beyond the lens of gender. To complement this, questions about DEI should be integrated into organizational culture surveys, exit interviews, and performance assessments at organizations that deal with nuclear security.

Data Collection. Another essential step in improving DEI in nuclear security is building a more complete and accurate understanding of the global state of the field. Comprehensive and reliable public data on demographic traits for nuclear security practitioners beyond gender or geographic representation, such as race or sexuality, is virtually nonexistent. Obtaining this data is essential for monitoring progress, determining if initiatives are working, and gauging how demographic changes amongst nuclear security field practitioners yield positive results. This data can be collected by international organizations, governments, and industry.

Governments/Regulators

Strengthening National Statements and Priorities. The U.S. statement to the IAEA Board of Governors meeting in March 2023 demonstrates the importance of governments advancing DEI in their national

statements in international forums. National priorities should focus on advancing DEI in nuclear security nationally, regionally, and globally and national statements should report on these DEI initiatives, progress made in advancing DEI, and best practices for nuclear security.

Implementing DEI to Strengthen Nuclear Security at the State Level. National legislation and regulations for nuclear security culture programs that emphasize the role of DEI in strengthening nuclear security can help support implementation of high-level state commitments. Drawing on the experience of integrating safety culture into nuclear facilities, high-level endeavors must be supplemented by a broad range of stakeholders in the security culture regime, including regulators, nuclear facility managers, and members of the nuclear security workforce. ³⁶

Organizations

Mainstreaming DEI into Nuclear Security Culture. All organizations responsible for implementing nuclear security should have programs focused on strengthening security culture. These programs, which should include the goal of helping practitioners develop more comprehensive approaches to evaluating threats, should incorporate DEI as a core concept fundamental to nuclear security culture. These programs can help nuclear security practitioners develop more comprehensive approaches to evaluating threats.

Data Collection. Organizations are the first step in improving data collection in nuclear security demographics. Organizations and facilities must commit to regularly collecting and sharing data as crucial for monitoring progress, determining if initiatives are working, and gauging how demographic changes in the nuclear security field yield positive results. Organizational culture surveys, exit interviews, and performance assessments at organizations that deal with nuclear security should integrate questions about DEI.

Individual practitioners

Developing an Inclusive Dialogue. More intersectional understandings of both DEI and initiatives for implementation are essential for diversifying the nuclear security field to account for not only women, but also people of color, members of the LGBTQIA+ community, people with disabilities, and other historically marginalized groups. Such initiatives should be flexible enough to apply outside of the Western cultural context.

Data Collection. Individuals should honestly and critically participate in organizational culture surveys, exit interviews, and performance assessments at organizations that deal with nuclear security to support continuous evaluation of the composition of the field.³⁷

Conclusion

Efforts to advance DEI in the nuclear field are underway, but the largest obstacle remains in ensuring that a broad range of nuclear security stakeholders understand how DEI can serve as a tool to strengthen nuclear security. Buy-in and implementation initiative from all stakeholders is the only effective way to address inequity in nuclear security and address the underlying biases and their associated security vulnerabilities. The recommendations outlined in this paper should be implemented, and further research

is needed to continue exploring how the international nuclear security community can develop a diverse, equitable, and inclusive nuclear security culture.

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