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Cover Page Footnote

The views expressed in this paper are those of the authors and do not necessarily represent those of the organizations to which they belong.

Gender Inclusive Nuclear Regulatory Body of Pakistan

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Abstract

A gender-inclusive workplace considers, recognizes, and promotes the skills and potential of both men and women, irrespective of their gender, race, ethnicity, ability, and age. In Pakistan, women in the workforce are increasing day by day and women are achieving higher positions at a corporate level. Nevertheless, the nuclear field is still generally considered a male oriented field. This paper aims to break the misconception and analyze gender inclusion in the nuclear regulatory body of Pakistan. The paper explores contours of gender inclusion in the Pakistan Nuclear Regulatory Authority (PNRA) by shedding light on female's representation in different management positions as well as in working level technical and non-technical committees. The paper study also highlights the steps PNRA management has taken, over the years, to ensure a conducive environment for the female workforce and provisions for an equal learning opportunity to enhance their competence.

I. Introduction

Gender inclusion in the workplace is a pertinent issue across the world. In Pakistan, women are making visible progress, both in managerial and executive levels. Gender inclusion in the workplace is an echoed phrase, but what does it mean? A gender-inclusive workplace is one that shows consideration, recognition, and promotion of skills and potential for both men and women and gives equal representation to both in the workplace regardless of gender, race, ethnicity, ability, sexual orientation, or age. Also, both men and women receive equal salary, opportunities, and fair treatment.

In Pakistan, the female workforce is growing day by day. The World Bank supplies data for Pakistan's female labor force participation rate from 1990 to 2019. The average value for Pakistan during that period was 18.21% with a minimum of 12.51% in 1995 and a maximum of 23.86% in 2015. The latest value from 2019 is 21.92% [1]. Though, these figures are not very encouraging because half of the total population of Pakistan is female. Nevertheless, it is encouraging that progress is steady and there are no

inclinations in trends. Furthermore, Pakistan is implementing its obligations under the *Convention on the Elimination of Discrimination against Women* [2], declarations of the *Millennium Development Goals* (MDGs), and the *Sustainable Development Goals* (SDGs) [3].

In the technically complex nuclear industry within Pakistan, there is extremely limited research about gender inclusion or women in the male-dominated field of nuclear technology. Nuclear related organizations such as designer, manufacturer, utility, or regulator are often perceived as male oriented. This study attempts to break this perception. However, considering the limited data available, this paper will only analyze gender inclusion in the nuclear regulatory body of Pakistan.

Pakistan Nuclear Regulatory Authority is the national authority responsible for regulating safety and security of nuclear installations and radiation facilities. PNRA is a younger organization established in 2001 with promulgation of PNRA Ordinance-III in 2001 [4]. In only two decades, this organization has earned national and international recognition as a competent regulatory body [2]. PNRA is also a gender inclusive and gender diverse organization. This study aims to find contours of gender inclusion in PNRA. It will also explore female's representation in different management positions, as well as in working levels of technical and non-technical committees. The study highlights the steps PNRA management has taken to ensure a good environment for the female workforce and provision for equal learning opportunities to enhance their competence. In conclusion, recommendations are given to make PNRA a more gender inclusive organization in coming years.

II. Women in Nuclear Industry: A Global Perspective

Natural sciences and engineering are traditionally seen as male dominated fields, resulting in women's underrepresentation in science, technology, engineering, and mathematics, commonly referred to as STEM subjects. Even with less representation women in science, specifically in nuclear science, are knowledgeable and competent. One pioneer of nuclear energy is Marie Curie, who won a Noble Prize, in 1903 for her work of separating radioactive materials [5]. She was also the first person who won two Nobel prizes after winning the second for her work in chemistry in 1911. While conducting research on radiation within uranium, Marie Curie discovered two new elements radium and polonium. After her death, her daughter Irène Joliot-Curie continued with her unfinished projects. Joliot-Curie is best known for discovering the concept of artificial or induced radioactivity. The mother of nuclear power is Lise Meitner, as her research contributed to the discovery of nuclear fission. Besides serving in the United Nations (UN) committee on atomic energy, Meitner has one-hundred and twenty-eight research articles on credit from her sixty years of work in atomic physics. Along with individuals there are many organizations taking initiatives to address gender issues in the nuclear sector with the aim to increase female participation in this technical field.

In the nuclear energy domain International Atomic Energy Agency (IAEA), which is foremost international forum for scientific and technical cooperation for the peaceful use of nuclear technology, strongly advocates the role of women in nuclear fields. IAEA hires multicultural personnel and strives for gender equality by increasing the number of women in its organization, by employing women in higher level staff categories, and implementing gender mainstreaming into its programmatic work. For gender equality [3], IAEA has taken measures which includes promoting the involvement of women scientists in the IAEA's coordinated research programs and technical cooperation projects; holding career seminars for students to encourage more women to choose careers in nuclear science and technology; and paying special attention to creating a family-friendly work environment that allows staff to combine work and family responsibilities [6]. In 2020, IAEA announced the Marie Skłodowska-Curie Fellowship Program which aims to increase the number of women studying in nuclear science and technology and non-proliferation studies through scholarships and work experience opportunities [5].

There are also other multilateral forums dedicated to professional women working in the nuclear field. Women in Nuclear (WiN) Global is a world-wide organization for professional women working in various fields of nuclear energy and radiation applications. Founded in 1993 [7], WiN aims to support and encourage women working in the global nuclear sector with the aim to increase awareness and provides information related to nuclear energy and its applications towards women and the younger generation [8]. Another international organization, World Institute for Nuclear Security (WINS) in Vienna, has initiated its Gender Champions Program in 2018 with the two-fold objectives to increase the women's representation in nuclear security and to draw attention to the positive impact of diversity and inclusiveness [8]. In July 2019, WINS has issued its special report on "Gender and Nuclear Security: Challenges and Opportunities" which has enlisted organizations and initiatives addressing gender issues in the nuclear sector [4]. This most notably includes Africa Centre for Science and International Security (AFRICISIS); CRDF Global; Gender Champions in Nuclear Policy; Group of Friends for Women in Nuclear; Institute of Nuclear Materials Management (INMM); Nuclear Energy Agency (NEA); Women of Color Advancing International Peace, Security and Conflict Transformation (WCAPS); and Women in International Security (WIIS).

III. Women Nuclear Regulator: Gender Inclusive PNRA

PNRA is a gender diverse and inclusive organization which values its female workforce, females from diverse ethnic backgrounds, academic qualifications, and positions that serve within PNRA. Before it was established as an independent regulatory authority, it was Pakistan Nuclear Regulatory Board (PNRB) under the Pakistan Atomic Energy Commission (PAEC). However, at the time of PNRA's formation, all employees of PNRB, including female personnel, were given the option to join either newly established regulatory authority or rejoin themselves with PAEC, and five females opted to join PNRA. This includes first female Director of PNRA who played an important role in drafting the PNRA Ordinance [5, 7].

Departments divided into Executive and corporate wings conduct functions and responsibilities assigned to PNRA. Departments in Executive wings core functions are developing regulatory framework; issuing licenses/authorizations; performing review and assessment; conducting inspections; and taking enforcement actions in case of non-compliance. The departments of corporate wings are driving forces, responsible for support functions, including the development of policies & procedures, capacity building, human resource development, providing technical support for licensing review and assessment, and analytical evaluation using computational codes [1]. Women in PNRA are contributing to organizational units, capabilities, and thrive in various positions such as Director General (DG), Director, and Head levels down to computer operators.

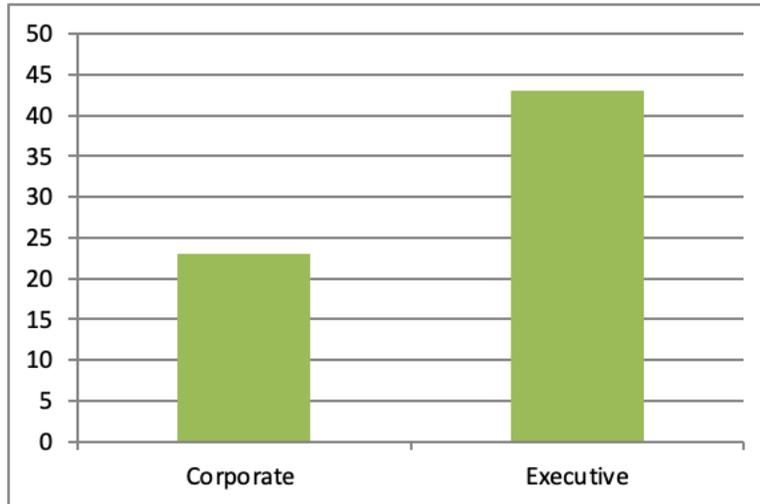


Figure 1: Division of PNRA Female Workforce

From executive placement to technically tough jobs, women in PNRA are making remarkable progress. It is pertinent to mention that nuclear power plants and radiation facility safety inspections were once considered field jobs suitable only for men, yet PNRA has provided opportunities to its women professionals so they can serve as inspectors.

PNRA female officials are not only contributing at organizational and national levels, but four women have also served at IAEA, employed in areas of nuclear safety, regulatory affairs, and emergency response. Their placement shows management's encouragement, and the Government of Pakistan's support for projecting technical potential of Pakistani females.

Women in PNRA are also given opportunities to represent Pakistan in different IAEA forums based on their regulatory experience. For several years, a female engineer has successfully served as a contact point and national coordinator for all matters related to Convention on Nuclear Safety (CNS). Another important achievement was a female scientist who contributed to the establishment of IAEA's International Nuclear Security Education Network (INSEN), and served as a national contact point, and now another female official is carrying the legacy. The IAEA also appointed a female officer to the Transport Safety Standards Committee (TRANSSC).

With reference to the nuclear security sector, female professionals from PNRA have played an instrumental role in establishing a regulatory regime for nuclear security through the National Nuclear Security Action Plan (NSAP). They have tirelessly worked to build and set up nuclear security training centers and radiation detection equipment labs, started nuclear security education programs at national levels, conducted training courses for all stakeholders, established and commenced export control mechanism, and strengthened existing emergency response arrangements for nuclear security incidents. PNRA is gender diverse and inclusive organization which values its female workforce.

IV. Contours of Gender-Inclusive PNRA

PNRA recognizes the fact that women add tremendous value to an organization, society, and a country. It supports an inclusive environment within the organization, to promote a diverse culture, and bring varied perspectives together. PNRA acknowledges that the nuclear security sector cannot reach its full potential without maximizing all available talents, and understands the need for female inclusion in its workforce. The following are major contours of gender inclusive efforts at PNRA.

A. Diverse Academic Background

Being nuclear regulatory body, PNRA is a technical organization staffed with talented and competent personnel. The female workforce of PNRA is highly qualified and has a diverse academic background, from natural science subject like physics, chemistry, medicines to social sciences like international relations, engineering, finance, and computer sciences. As a nuclear regulator, they are also professionally qualified as nuclear engineers and medical physicist, creating an academic diversity is important as it joins different perspectives to the same issues, thus effectively contributing to regulatory decision-making processes. Figure 2 shows diverse academic background of women in PNRA.

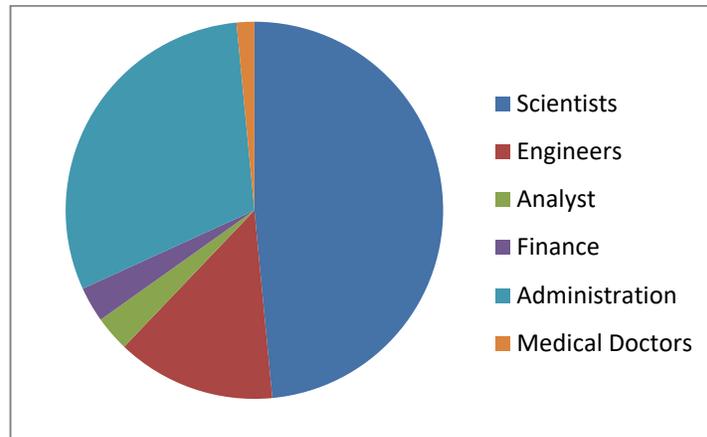


Figure 2: Division of PNRA Female workforce

B. Female Representation at Management Level and Working Level Committees

Female employees have good representation at management level in PNRA. Additionally, females play an active part in many working-level committees formed for some technical or administrative tasks, when needed. PNRA appoints female officers as members of the tasks force, responsible for developing regulations, and other regulatory documents. The administrative committees manage social activities, like employee welfare, and sports.

C. Youth Representation

Most of the Female employees at PNRA are young between the ages 30 to 40 years old. They are energetic, dynamic, and try to serve the organization to the best of their knowledge and abilities, with goals to protect workers, people, and the environment from harmful effects of ionizing radiation.

D. Safe and Enabling environment

PNRA management provides a low stress working environment for women by discouraging harassment in the workplace, and has established an anti-harassment committee for implementing the *Code of Conduct for Protection against Harassment of Women at the Workplace*. The Government of Pakistan has issued a code of conduct requiring all public and private organizations to adopt an internal code of conduct. They also require a complaint and appeal mechanism aimed toward establishing a safe working environment, free of intimidation and abuse for all working women [9].

In addition, PNRA established a childcare center to facilitate working mothers, encouraging a smooth daily transition between work and home. Working mothers may bring their children to work at appropriate times, and they may also visit their babies during the workday. It is worth highlighting that

during COVID-19 pandemic, PNRA facilitated their female officials to work from home, considering their home-bound responsibilities with their families.

E. Merit based Recruitment Process

The PNRA recruitment process is open to all eligible candidates without discrimination based on gender, creed, or color [9]. Furthermore, posting transfers of female are considered as “per government” rules.

F. Access to easy and safe transport facility

In Pakistan, the condition of private transportation is poor for working-class individuals, particularly for women. PNRA has overcome one of the strongest barriers to female workforce's mobility by supplying transportation access to a safe and easy pick and drop facility, ensuring safety for all employees.

G. PNRA Women Guild

The PNRA Women's Guild (PNRA WG) is a non-political association that promotes women's networking and social gatherings in a co-operative structure. Founded in 2006, PNRA WG aims to promote companionship between the women working at PNRA and spouses of their male colleagues to develop a better understanding through sharing social norms that represent different ethnic communities and cultures.

The founder and organizer of PNRA WG in 2006 was the wife of the Founding Chairman of PNRA, who with other senior members of the guild developed the structure in a meeting. Since then, the guild expanded, and a large number of activities are organized through this same platform. The guild has flourished, and the membership has exceeded 70 members. Since 2018, the wife of the current PNRA chairperson has served as president of the guild. The guild has continued to grow during the intervening years under the leadership of current president. The PNRA Women Guild regularly conducts its monthly meetings, arranges workshops, awareness lectures, and other learning opportunities.

H. Participation in Social and Sports Events

PNRA female workforce regularly commemorates important social events like the International Women's Day and festivities, encouraging female employees to actively participate in different relevant programs to reinvigorate their spirit and boost morale. Furthermore, female officials regularly take part in sport activities that are reorganized within the organization, at national level.

I. Training Opportunities for PNRA female workforce

PNRA extends equal training opportunities like trainings courses, workshops, and seminars to women in-house, nationally, and internationally. Women from PNRA have also represented Pakistan at international level as experts in different IAEA workshops and training courses. Three PNRA female officers served in IAEA on regular technical posts, and several female officers have remained on fellowships and scientific visits. Two female officers remained attached with United States Nuclear Regulatory Commission (USNRC) for two years to learn best practices and gain regulatory experiences.

Though women have smaller representation in the nuclear regulatory body, they make useful contributions in regulatory oversights of nuclear installations and radiation facilities. PNRA management is aware of the fact that females constitute integral part of regulatory workforce, and they work with the male workforce to ensure safety and security of Pakistan's civilian nuclear program.

V. Challenges to Female Workers at Workplace

Female employees face many challenges at the workplace, which are more embedded in culture, rather than in the organization. The biggest challenge for the female workforce is cultural norms or taboos.

Culture, either social or national, plays a key role in deciding women's professional choices. Cultural traditions did not encourage women to work compared to men; however, this trend is changing in Pakistan. Many women are taking part in the professional world. From the traditional cottage industry and low paying factory jobs, women are making long strides at corporate and executive levels.

Nevertheless, cognitive biases and stereotypes exist at every place, but have nothing to do with the organization. Organizations can promote healthier work environments and eliminate gender bias. Steps for eradicating gender bias includes awareness regarding benefits of inclusive gender; more involvement of female workforce in technical and administrative decision-making bodies; and giving women a structured voice to address their issues.

VI. Conclusion

Gender inclusive workplaces are the need of the hour. A workplace that is free from biases related to gender, race, ethnicity, ability, and ages fosters new ideas, provides different perspectives, and ensures transparency in decision making. Nuclear history shows how women in nuclear security has contributed to the well-being of humankind, thorough either scientific inventions or making technology safe and secure.

In countries like Pakistan, where cultural and social norms prevent women from using their potential and safety and security concerns limits their mobility, a national nuclear regulatory body is providing safety and security, enabling environments to encourage its female workforce. At the organizational level, management encourages gender inclusion not only through words, but actions are taken to ensure a comfortable working environment for women. As stated earlier, there is no discrimination on bases of gender for recruitment, positing, transfers, promotions, and training opportunities (nationally or internationally). There are no concerns related to mobility, as safe transportation is provided to all employees of PNRA, including women. Females from diverse academic backgrounds are serving in PNRA, and they participate in decision making at management levels, working levels, and perform in technical and administrative committees. Management at PNRA has provided them a safe and enabling environment to perform well and make progress. PNRA has implemented a zero-tolerance policy for harassment in the workplace, to ensure that females working at PNRA do not face issues at any level of their professional life. Women of PNRA have an onsite child daycare facility. They have their independent platform like PNRA Women Guild as an association which also serves as a bridge between working ladies and spouses of males working in PNRA. Women regularly take part in social and sporting events within the organization. To sum up, gender inclusion exists in PNRA which provides a healthy working environment to its female workforce.

VII. Works Cited

1. The World Bank, Pakistan Female labor force participation - data, chart. *TheGlobalEconomy.com* (2021), (available at https://www.theglobaleconomy.com/Pakistan/Female_labor_force_participation/).
2. Government of Pakistan, Part I: Acts, Ordinances, President's Orders and Regulations (amended). *Gaz. Pak.* (2012) (available at [https://www.pnra.org/upload/legal_basis/Ordinance%202001\(Amennded\).pdf](https://www.pnra.org/upload/legal_basis/Ordinance%202001(Amennded).pdf)).
3. United Nations Millennium Development Goals. *U. N. Millenn. Dev. Goals 2015* (2015), (available at <https://www.un.org/millenniumgoals/>).

4. United Nations Conference on Sustainable Development, Rio+20. *Sustain. Dev. Knowl. Platf.* (2012), (available at <https://sustainabledevelopment.un.org/rio20.html>).
5. IAEA Mission Concludes Peer Review of Pakistan’s Nuclear Regulatory Framework. *Int. At. Energy Agency IAEA* (2014), (available at <https://www.iaea.org/newscenter/pressreleases/iaea-mission-concludes-peer-review-pakistans-nuclear-regulatory-framework>).
6. M. Rentetzi, *Trafficking Materials and Gendered Experimental Practices: Radium Research in Early 20th Century Vienna* (Columbia University Press, 2009; <http://cup.columbia.edu/book/trafficking-materials-and-gendered-experimental-practices/9780231135580>).
7. Recruiting women at the IAEA. *Int. At. Energy Agency IAEA*, (available at <https://www.iaea.org/about/employment/recruiting-women>).
8. Gender Programme. *World Inst. Nucl. Secur. WINS*, (available at <https://www.wins.org/gender/>).
9. Senate Secretariat, [THE PROTECTION AGAINST HARASSMENT OF WOMEN AT THE WORKPLACE ACT 2010] Part 1: Acts, Ordinance, President’s Orders and Regulations. *Gaz. Pak.*, 15 (2010).