Samy Shaaban Atallah Soliman

Chairman of Egyptian Nuclear & Radiological Regulatory Authority (ENRRA)

"I am an accomplished leader in the nuclear field with over 35 years of experience, currently serving as Chairman of ENRRA. My career includes significant roles at the Egyptian Atomic Energy Authority (EAEA), where I promoted international cooperation and safety in nuclear operations. With a strong academic background in nuclear Solid-State Physics and a publication record exceeding 70 articles, I am dedicated to advancing nuclear regulation and mentoring future leaders in the industry."

Prof. Samy S. A. Soliman

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PROFESSIONAL WORK EXPERIENCE

Chairman

Egyptian Nuclear & Radiological Regulatory Authority (ENRRA)

Jan 2017 - Present

Since January 28, 2017, I have served as the Chairman of ENRRA, where I lead the regulatory and oversight functions related to safety, security, safeguards, and emergency in the nuclear and radiation sectors. My role involves achieving ENRRA's policy goals and proving it as a distinguished regulatory authority at national, regional, and international levels.

Key Responsibilities:

- **Policy Implementation:** Overseeing the execution of ENRRA's policy to ensure the peaceful use of atomic energy and protect people and the environment from ionizing radiation.
- **Regulatory Management:** Strengthening the national regulatory system for nuclear and radiation safety, security, safeguards, and emergency preparedness.
- **Engagement and Awareness:** Enhancing public awareness and engagement with stakeholders while ensuring transparency and credibility in regulatory activities.

Major Achievements:

- **Organizational Structure and Capacity Building:**
  - Established a robust organizational structure from the ground up, transforming ENRRA into a competent regulatory body.
  - Launched the Center of Excellence to enhance capacity-building initiatives, localizing essential knowledge as a valuable organizational asset.
- **Integrated Management System (IMS):**
  - Developed a fully integrated management system linked to an electronic management system, enhancing operational efficiency, and reducing human error.

  - Implemented a comprehensive IMS that incorporates principles of safety, health, environmental security, and quality management, reflecting our commitment to a strong safety culture.
- **Knowledge Management Framework:**
  - Established an ultramodern knowledge management system including 1,800 knowledge domains and approximately 8,000 interconnections, easing seamless access to critical information for decision-making.
  - Promoted continuous improvement in regulatory practices, aligning with Egypt's Vision 2030 and the UN Sustainable Development Goals.
- **Digital Transformation:**
  - Initiated a digital transformation program to streamline organizational processes, ensuring accountability, improving data management, and enhancing overall performance.
  - The electronic management system (EMS) supports clear identification of responsibilities, reduces paperwork, and improves analysis for auditing purposes.
- **Stakeholder Involvement and Communication:**
  - Developed a comprehensive communication strategy to build national and international partnerships and measure stakeholder satisfaction.
  - Engaged in active dialogue with interested parties, fostering trust and collaboration in regulatory activities.
- **Regulatory Oversight of the El Dabaa Nuclear Power Plant:**
  - Successfully managed the licensing and regulatory oversight process for the El Dabaa Nuclear Power Plant, granting multiple construction permits from 2022 to 2023, and conducting regular inspections to ensure compliance with safety standards.

Through these initiatives, I have not only fulfilled my statutory responsibilities but have also positioned ENRRA as a leader in nuclear regulatory practices, capable of sharing expertise with other regulatory bodies globally. My efforts align closely with ENRRA's mission and goals, contributing to the effective governance of nuclear safety and security in Egypt.

Vice Chairman for Training and International Cooperation

Egyptian Atomic Energy Authority (EAEA)

Feb 2014 – Jan 2017

In my role as Vice Chairman for Training and International Cooperation at EAEA, I assisted the Chairman in advancing public policy for atomic energy in Egypt and achieving strategic goals. My key responsibilities included:

- **Policy Development:** Identifying and formulating public policy initiatives aimed at enhancing the application and study of atomic energy programs within Egypt.
- **Program Oversight:** Supervising the implementation of approved atomic energy programs and ensuring they align with the country's political, economic, and social goals.
- **International Relations:** Overseeing treaties and agreements with various countries and coordinating communications with the International Atomic Energy Agency and other scientific institutions.
- **Strategic Coordination:** Linking atomic energy initiatives to the overall national development plans, while ensuring comprehensive reporting on progress.
- **Scientific Affairs Management:** Overseeing all scientific activities and sectors within EAEA, providing expert opinions on relevant matters affecting the Authority and state agencies.

- **Delegated Authority:** Acting on behalf of the Chairman in his absence, exercising full authority and responsibilities.
- **Board Membership:** Taking part as a member of the Board of Management and leading various committee initiatives.

Through these efforts, I played a crucial role in fostering international collaboration and enhancing the ability of EAEA to support Egypt's atomic energy goals.

Chairman of Nuclear Research Center

Egyptian Atomic Energy Authority (EAEA)

Feb 2013 – Feb 2014

As Chairman of the Nuclear Research Center, I supervised approximately 2,000 employees, including scientific researchers, engineers, technicians, and administrators. The Center, located near Anshas (60Km Northeast Cairo), is a pivotal establishment dedicated to a broad spectrum of nuclear research activities aimed at peaceful applications of atomic energy.

Key Responsibilities and Achievements:

- **Oversight of Research Divisions:** Led four specialized divisions focused on enhancing the nuclear fuel cycle, developing research reactors, and utilizing radioactive isotopes across medical, industrial, and agricultural applications.
- **Research Facilities Management:** Managed Egypt's first research reactor and a nuclear fuel processing facility, along with laboratories dedicated to various research fields, including physics, metallurgy, electronics, neutron generation, elemental and isotopic analysis, biotechnology, and desert agriculture.
- **Promotion of Innovation:** Fostered advancements in nuclear research through the Basic Nuclear Sciences Division, which conducted theoretical and experimental physics research and managed accelerator operations.
- **Nuclear Materials Development:** Oversaw the Nuclear Materials and Manufacturing Division, focused on the research and development of nuclear materials, including fuel and structural materials for reactors, as well as innovations in chemical engineering, electronics, and radiation detection.
- **Applied Research Initiatives:** Guided the Atomic Reactors Division in reactor physics and engineering research and supported the Radioactive Applications Division in conducting research in radioimmunoanalysis and molecular biology, with practical applications in health, agriculture, and environmental studies.

Under my leadership, the Nuclear Research Center significantly contributed to scientific research and technological advancements in nuclear energy and its applications, reinforcing its role as a crucial hub for innovation in the field.

Chairman of the Reactors Division

Egyptian Atomic Energy Authority (EAEA)

Sep 2012 – Feb 2013

In this leadership role, I managed the strategic and operational functions of the Reactors Division within the Nuclear Research Center, overseeing three critical departments: Reactors, Reactor Physics, and Health Physics & Civil Defense. My responsibilities extended to administrative oversight and technical plan enhancement, ensuring alignment with national nuclear research and safety goals.

Key Responsibilities and Achievements:

- **Strategic Oversight:** Directed the development and execution of scientific and technical plans across all departments, ensuring alignment with national goals for nuclear research and safety.
- **Department Leadership:** Managed cross-functional teams within the Reactors Division, promoting collaboration across the Reactor Physics and Health Physics departments to foster scientific advancements.
- **Health & Safety Compliance:** Oversaw health physics and civil defense protocols, ensuring a robust safety culture and preparedness for radiological incidents.
- **Research & Innovation:** Advanced research initiatives in reactor physics and engineering, contributing to scientific progress and improving reactor performance and safety.

Through these efforts, I played a pivotal role in ensuring the seamless operation of the Reactors Division, advancing Egypt's nuclear research capabilities while prioritizing safety and innovation.

Supervisor of the ETRR-2 Reactor Complex (Reactor- FMPP- RPF)

Egyptian Atomic Energy Authority (EAEA)

Jun 2012- Feb 2013

As the General Director for the ETRR-2 Reactor Complex, I oversaw the operations of three key facilities: the ETRR-2 multipurpose research reactor (22 MW power, $2.7x10^{14}$ $n/s.cm^2$), the Fuel Manufacturing Pilot Plant (FMPP), and the Radioisotope Production Facility (RPF). My leadership during this period involved coordinating technical teams, resolving operational challenges, and improving the facilities for maximum efficiency.

Key Responsibilities and Achievements:

- **Reactor Availability:** Addressed and resolved technical issues related to power channel fluctuations, ensuring the reactor was fully operational and meeting safety standards.
- **Radioisotope Production Commissioning:** Successfully commissioned the Radioisotope Production Facility (RPF) after resolving pending issues, achieving three successful production runs of Iodine-125, Iodine-131, and Chromium-51. Managed the loading of Technetium-99 generators and completed the commissioning process for the production of Molybdenum-99 and Iridium-192.
- **Neutron Radiography Facility Commissioning:** Led the commissioning of the dynamic Neutron Radiography Facility, broadening its applications across various fields and ensuring its full operational capability.
- **Facility Optimization:** Streamlined the use of nuclear facilities to maximize productivity, ensuring seamless operations and delivering on key research and production goals.
- **Team Leadership:** Collaborated closely with managers and technical teams to ensure smooth operations and the successful completion of complex projects within the reactor complex.

Through my leadership, the ETRR-2 Reactor Complex achieved significant milestones in reactor operations, radioisotope production, and neutron radiography applications, contributing to Egypt’s nuclear research and medical advancements.

Vice Chairman of the Reactors Division for Technical Affairs

Egyptian Atomic Energy Authority (EAEA)

Feb 2012 – Sep 2012

In this brief role, I coordinated the development and implementation of the technical plans for the Reactors Division, overseeing the Reactors, Reactor Physics, and Health Physics & Civil Defense departments.

Key Responsibilities:

- **Technical Strategy:** Led the creation of technical plans to enhance reactor operations and safety.

- **Departmental Coordination:** Ensured collaboration between key departments to achieve operational goals.
- **Administrative Oversight:** Managed essential administrative functions to support the division's goals.

Head of the Reactor Physic Department

Egyptian Atomic Energy Authority (EAEA)

Mar 2011 – Feb 2012

In this dual technical and managerial role, I led the Reactor Physics Department, overseeing its strategic direction and scientific research. The department, established in the mid-1960s shortly after Egypt's first reactor (ET-RR-1), focused on reactor and neutron physics, as well as the practical applications of nuclear radiation in peaceful fields. My leadership ensured the integration of innovative research methodologies and technological advancements.

Key Responsibilities and Achievements:

- **Technical Leadership:** Directed comprehensive research in reactor physics and neutron behavior, applying advanced nuclear methodologies to explore material properties and develop technological applications.
- **Scientific Development:** Played an active role in steering both experimental and theoretical research teams, guiding studies that ranged from fundamental reactor physics to applied nuclear techniques in industry, technology, and medicine.
- **Research Facility Upgrades:** Spearheaded the modernization of department facilities, incorporating state-of-the-art systems to enhance research capabilities, ensuring alignment with international standards.
- **Managerial Oversight:** Managed a multidisciplinary team, overseeing the execution of scientific and technical plans while fostering a collaborative environment that promoted innovation and excellence.
- **Applied Nuclear Research:** Focused research efforts on using nuclear radiation for peaceful applications, particularly in material science, employing supplementary techniques for real-world technological solutions.

Under my leadership, the department advanced Egypt's scientific capabilities in nuclear research, contributing to innovations in both academic and applied nuclear science.

Professor, Head of Nuclear Solid-State Group

Egyptian Atomic Energy Authority (EAEA)

Nuclear Research Center, Reactor & Neutron Physics Department

Jun 2005 – Mar 2011

In my role as the head of the Nuclear Solid-State Group, I lead and manage scientific research activities, focusing on the preparation and analysis of magnetic materials, including conventional and high-temperature superconductors, and perovskite compounds.

Key Responsibilities:

- **Research Leadership:** Direct the group in the preparation and investigation of magnetic materials, overseeing experimental and theoretical studies on their physical properties.
- **Material Analysis:** Use advanced techniques such as x-ray and neutron powder diffraction, Mössbauer Effect spectroscopy, and various electrical measurement methods to analyze and assess material characteristics.

- **Academic Supervision:** Mentor and supervise master's and PhD candidates from multiple universities, guiding their research projects and theses.

Associate Professor, Head of Nuclear Solid-State Group

Egyptian Atomic Energy Authority (EAEA)

Nuclear Research Center, Reactor & Neutron Physics Department

Jun 2000 – Jun 2005

In this role, I managed research initiatives while contributing to academic instruction and mentoring within the department.

Key Responsibilities:

- **Group Management:** Planned and oversaw the activities of the Nuclear Solid-State Group, focusing on the preparation and study of magnetic materials.
- **Research Oversight:** Conducted research on material properties using state-of-the-art analytical techniques, fostering innovation and collaboration within the team.
- **Academic Guidance:** Supervised graduate students' research efforts, helping to advance their academic and professional development.

Lecturer of Physics at Nuclear Solid-State Group

Egyptian Atomic Energy Authority (EAEA)

Nuclear Research Center, Reactor & Neutron Physics Department

Jun 1995 – Jun 2000

During this period, I focused on enhancing research capabilities and contributed significantly to my academic field through a fellowship and subsequent initiatives.

Key Responsibilities:

- **Research Fellowship:** Participated in a seven-month fellowship at NIST, USA, optimizing neutron diffraction techniques for material analysis.
- **Laboratory Development:** Proposed and implemented new research facilities, including a High-Resolution Powder Diffractometer, and upgraded Mössbauer laboratory.
- **Physical Properties Analysis:** Established a comprehensive electrical measurements laboratory, facilitating advanced studies of material properties.

Assistant Lecturer of Physics at Nuclear Solid-State Group

Egyptian Atomic Energy Authority (EAEA)

Nuclear Research Center, Reactor & Neutron Physics Department

Nov 1991 – Jun 1995

In this initial academic role, I pursued my PhD while actively enhancing the research infrastructure.

Key Responsibilities:

- **PhD Research:** Conducted experimental work at KFA Research Center, Germany, focusing on high-temperature superconductors (HTSC).

- **Facility Upgrades:** Collaborated with the department to upgrade critical research facilities, enhancing the department's research capabilities.

Demonstrator of Physics at Nuclear Solid-State Group

Egyptian Atomic Energy Authority (EAEA)

Nuclear Research Center, Reactor & Neutron Physics Department

Apr 1986 – Nov 1991

In this foundational role, I began my academic career while pursuing my master's degree.

Key Responsibilities:

- **Research Initiation:** Conducted initial studies on the physical properties of mixed cubic ferrites using various analytical techniques, contributing to the department's research output.

INTERNATIONAL ENGAGEMENT AND PROFESSIONAL ACTIVITIES

This section highlights key international roles and contributions that reflect my commitment to advancing nuclear science and regulatory practices:

- **Leadership Roles:**
  - **Chairman**, Egyptian Nuclear and Radiological Regulatory Authority (ENRRA) since January 2017: Oversaw regulatory functions for nuclear and radiation safety in Egypt, establishing collaborations with international organizations to enhance best practices.
  - **Vice Chairman**, Egyptian Atomic Energy Authority (EAEA) for Training and International Cooperation (Feb 2014 – Jan 2017): Fostered international partnerships and cooperation in nuclear education and training.
- **Key International Contributions:**
  - Engaged in numerous international conferences and workshops, representing Egypt in organizations such as the **International Atomic Energy Agency (IAEA)** and the **Arab Atomic Energy Agency (AAEA)**, focusing on nuclear safety, security, and education.
  - Served as a **national coordinator** for the African Network for Nuclear Education and Training (AFRA-NEST), participating in General Assemblies in Arusha, Tanzania (2013) and Lusaka, Zambia (2015), to address educational needs and capacity building in Nuclear Science and Technology (NS&T).
- **Research Collaborations:**
  - Completed fellowships at prestigious institutions, including a **KFA Research Center** in Jülich, Germany (1992-1993) and the **National Bureau of Standards Reactor (NBSR)** at NIST in Gaithersburg, USA (1995-1996), focusing on neutron diffraction techniques and materials analysis.
  - Collaborated with the **Joint Institute of Nuclear Research (JINR)** in Dubna, Russia, facilitating scientific exchanges and research in neutron physics.
- **Research Publications:**
  - I have over 70 Published scientific papers, list of publications can be attached upon request.
- **Professional Memberships:**
  - **Deputy Chairperson**, Forum of Nuclear Regulatory Bodies in Africa (FNRBA).
  - Member, High Steering Committee of the **Global Nuclear Safety and Security Network (GNSSN)**.
  - Member, Regulatory Cooperation Forum (RCF) and **Egyptian Society of Nuclear Science and Applications**.
- **Peer Review Contributions:**
  - Actively reviewed scientific projects for the Science and Technology Development Fund (STDF) and served as a referee for multiple international journals, enhancing the quality of nuclear research and publications.
- **Commitment to Capacity Building:**
  - Instrumental in the establishment of a **Center of Excellence** at ENRRA, promoting regulatory capacity-building and knowledge management through training programs and stakeholder engagement.

This overview represents a selection of my international engagements; I have actively participated in numerous additional workshops, meetings, and activities both nationally and internationally.

EDUCATION

Ph.D. in Solid State Physics

Cairo University, Giza, Egypt

1991 - 1995

Focused on advanced research in solid state physics, culminating in a doctoral dissertation.

M.Sc. in Solid State Physics

Cairo University, Giza, Egypt

1988 - 1991

Conducted in-depth studies and research in solid state physics.

Post Graduate Courses in Solid State Physics

Cairo University, Giza, Egypt

1986 - 1987

Completed specialized coursework enhancing knowledge in solid state physics.

B.Sc. in Physics

El-Menofia University, El-Menofia, Egypt

1981 - 1984

SPECIALIZED TRAINING

IAEA Fellowship in Neutron Physics

National Institute of Standards and Technology (NIST), Gaithersburg, Maryland, USA

Aug 1995 – Mar 1996

Focused on the optimization and utilization of a double-axis neutron diffractometer for analyzing residual stress and texture in single crystals.

Collaborative Research Experience

KFA Research Center, Jülich, Germany

Oct 1992 – Dec 1993

Conducted experimental work in the field of high-temperature superconductors as part of Ph.D. research.

LANGUAGES

Arabic	English	Russian	German
Native	Fluent	Limited Work Proficiency	Limited Work Proficiency