**DAVID OTWOMA, PhD**

P. O. Box 5687 - 00100,

Nairobi, Kenya

email: [otwomada@gmail.com](mailto:otwomada@gmail.com), [david.otwoma@nacosti.go.ke](mailto:david.otwoma@nacosti.go.ke) & otwoma@uonbi.ac.ke

Safcom: +254 722 141771,

Orange : + 254 (0)20 2346915

**ACHIEVEMENTS HISTORY**

2014 – present

Appointed Board Member to the Radiation Protection Board in 2019.

Judge during Kenya Electricity Generating Company Limited (KenGen), Innovation Seminars in 2017, 2018 and 2019. Duties involve assessing proposals and project presented, ranking them taking into account their contributions to the business operations.

Appointed as Alternate Board Member of Principal Secretary to the Kenya Space Agency in 2018.

Resources person to African Young Generation in Nuclear in Conferences held in Nairobi, Kenya and Lusaka, Zambia leading to formations of Kenya Young Generation in Nuclear and Zambia Young Generation in Nuclear.

Appointed in 2017 as the National Coordinator for Regional Networking of African National Nuclear Institutions (NNIs) aiming to encourage close collaboration between the African NNIs in matters pertaining to Nuclear Science and Technology, thereby reinforcing the spirit of regional cooperation as a key element of the African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology (AFRA) strategy.

Member from 2017 of the Education Program and Expert Committee of Kenya National Commission for United Nations Educational, Scientific and Cultural Organization.

Committee member from 2016 of the Kenya- Ethiopia Cooperation on Scientific and Technological Cooperation mandated to foster closer working relations between the two countries on Matters S&T.

Appointed as Committee member to Konza Technopolis Development Authority in 2016 to spearhead the development of the National Physical Sciences Research Laboratories (NPSRL). This was as a result of producing the NPSRL Strategy whose team comprised of universities, industry players and NACOSTI provided back stopping facilities.

My paper titled “Challenges and opportunities as Kenya grapples with how to introduce a nuclear regulator “published in ESI Africa’s Power Journal, formed part of the discussion in the August 2015 Eastern Africa Power Industry Convention.

Participated in the production of a technopolicy brief titled “Mainstreaming Gender in the National Science, Technology and Innovation Policy in Kenya’ in 2014.

2011 -2013

The Ministry of Energy & Petroleum to perform economic evaluation of Uranium and Thorium to interest mining and related activities after mapping out of 23 sites in Kenya with rocks rich with U and Th resulting in the two minerals joining the category of energy minerals reserved initially to coal and oil.

The Nuclear Electricity Development Project transformed to Kenya Nuclear Electricity Board after successful recruitment of 52 staff and performance of Milestone 1 activities leading to a knowledgeable commitment to nuclear energy programme ongoing.

2007 – 2010

Secretary to the Task Force for developing the Country Program Framework for the cycle 2011 to 2016 between Kenya and the International Atomic Energy Agency (IAEA) whose emphasis is to thrust Kenya into nuclear power generation, nuclear applications in human health, agriculture, water resources and industry while observing nuclear safety, radiation protection and radioactive waste management criteria.

Liaison with International Organizations e.g., Comprehensive Test Ban Treaty Organization, IAEA, UNESCO, UNIDO among others and linking them with local organizations; For IAEA there are 8 national projects, 52 AFRA projects, 25 Coordinated Research Projects and 2 inter-regional Projects that were going on when I acted as National Liaison Assistant to the National Liaison Officer. For UNESCO we had a broad based business plan for Science and Technology Parks development in place.

1999 – 2006

Trail blazed as 1st Kenyan Nuclear Safeguards Inspector and shared with the Director general the Nobel Peace Prize

1988 -1998

Initiated concerns over radioactive waste management resulting in becoming the Team Leader and Local Counterpart for the Radioactive Waste Management technical co-operation project (TCP) with the IAEA. The project was later replicated in Africa under the African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology projects (AFRA).

**EMPLOYMENT HISTORY**

FORMAL

Date:

September 2013 - present

Part Time Employer: Department of Physics of University of Nairobi and the Technical University of Kenya

Position: Senior Lecturer

**RESPONSIBILITIES:**

Teaching of 3rd and 4th year BSc students who take atomic and nuclear physics courses;

Supervision of PhD and MSc students specializing in nuclear and radiation physics;

Design and Supervision of physics practical’s for undergraduate students

Date: February 2019 to present

Employer: National Commission for Science Technology and Innovation

Position: **Chief Analyst at Job Level 3**

**RESPONSIBILITIES:**

Head of Physical, Industrial and Energy Sciences Schedule (PIE SS) responsible to the Director, Scheduled Sciences for:-

1. Developing draft policy briefs for advisory and priority setting within PIE SS
2. Implementing programmes for the promotion and awareness creation on research systems within PIE SS
3. Proposing priority programmes for the development of PIE SS
4. Providing input into the review of applications for registration of research institutions and licensing of research projects in PIE SS
5. Providing secretariat to the Advisory Research Committee, and
6. Preparing position papers in PIE SS

Date: February April 2014 – February 2019

Employer: (Public Service Commission) National Commission for Science Technology and Innovation,

Ministry of Education, Science and Technology

Position: **Chief Scientist at Job Level 12**

**RESPONSIBILITIES:**

As per the Science Technology and Innovation Act 2nd schedule I head the Physical, Industrial and Energy Sciences Schedule.

**RESPONSIBILITIES:**

Date: September 2012 – February 2014

Employer: (Public Service Commission) Ministry of Energy

Position: **Secretary (Nuclear) at Job Group T**

**RESPONSIBILITIES**:

Reporting to the Permanent Secretary, Ministry of Energy with the responsibility of mapping out availability of thorium and uranium in Kenya in relation to existing, potential and speculative energy basins.

Specific duties included to:

* correlate the available geological, geochemical and satellite data to availability of uranium (U) and thorium (Th) energy minerals;
* locate and quantify U and Th in various energy basins in Kenya by collecting rock, soil, water and sediment samples at various energy basins in the country;
* correlate the concentration of uranium and thorium to energy output in relation to geothermal, oil & gas and coal energy basins;
* perform economic evaluation of U and Th to interest mining and related activities

Date: February 2011 – September 2012

Employer: (Public Service Commission) Nuclear Electricity Development Project, Ministry of Energy

Position: **Secretary (Nuclear) at Job Group T**

**RESPONSIBILITIES:**

Seconded by the Ministry of State for Public Service to the Nuclear Electricity Development Project in Ministry of Energy following gazettement of the Nuclear Electricity Project Committee.

Reporting and Accounting to the Executive Chairman;

In charge of Secretariat and Head of Technical Services Department;

Team leader of Assessors performing the Pre-Feasibility Study for NPP;

Carry out Stakeholder Education on Peaceful Use of Nuclear Energy;

Incorporation of Nuclear Power in the Country’s Sustainable Development Strategy;

Develop Collaborative Program with Universities and Research Institutions for Nuclear Research and Business Development;

Analyze Nuclear Technologies and their Suitability for Domestic Application;

Develop Security and Safeguards Requirements for Nuclear Use;

Identify Sites for Nuclear Power Plants;

Develop a Nuclear Information Centre;

Position: **Secretary (Nuclear) at Job Group T**

Date: September 2007 – February 2011

Employer: (Public Service Commission) National Council for Science and Technology, Ministry of Higher Education, Science and Technology

Position: **Chief Science Secretary at Job Group R**

**RESPONSIBILITIES:**

Oversee the developing, managing, evaluation and monitoring of multidisplinary nuclear based research registry and data base on research projects and programs;

Preparation of strategic and operational plans for input into policy, legal and institutional reforms to enhance science, technology and innovation, with a bias to nuclear science and technology in energy, industry, water, agriculture and human health;

Co-ordinating cross sectoral policies on research clearance and research activities;

Generation of accurate and timely reports as may be required from time to time;

Successfully organizing trainings, workshops, seminars and technical meetings for IAEA sponsored projects so as to enhance inter- and trans-displinarity between them;

Prepare Physical Sciences schedule budget and ensure effective utilization of resources through effective control;

Member of the National Steering Committee for Development of Science and Technological Parks;

Liaising with the Kenya National Academy of Science; and

Deputizing the Secretary to the Council in providing advise to the Permanent Secretaries of line Ministries on Technical matters pertaining to applications of physical and nuclear science and technology;

Date: 1999 - 2006

Employer: International Atomic Energy Agency.

Position: **Nuclear Safeguards Inspector at Job level P3**

**RESPONSIBILITIES:**

Led groups of inspectors in the field and carried out verification and analytical work as part of safeguards activities and inspections at various nuclear facilities and sites, and at HQ, in order to verify: the absence of undeclared nuclear material or activities; undeclared production or processing of nuclear material at declared facilities; and non-diversion of nuclear material. In particular for:-

In-field activities:

Verification of nuclear material accountancy, including examination of records and reports prepared by the facility operator and/or State or regional safeguards authorities;

Collected nuclear material and environmental samples;

Routinely serviced containment and surveillance equipment;

Calibrated and operated instruments for measuring nuclear material;

Verification of the absence of undeclared activities and the scope and purpose of nuclear related activities at places primarily involved in the nuclear fuel cycle of a State;

Verification of design information to confirm information provided by States and relevance of safeguards approaches.

HQ Activities:

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* Planned and prepared safeguards activities and inspections at various nuclear facilities and sites;
* Worked on the development of safeguards approaches;
* Reviewed and evaluated remote monitoring and surveillance information for nuclear sites and facilities (including seals, sensors and surveillance data);
* Reviewed and analyzed associated information and reports and follow ups on results in liaison with relevant Department partners;
* Completed inspection, design information and complementary access reports and statements related to them with due regard to promptness, accuracy, completeness and quality of presentation;
* Established and maintained technical information with regard to specific safeguards;
* Analyzed, reviewed and evaluated data collected from various sources including State declarations and reports, inspection results, facility design information, complementary access, computerized databases and open sources in order to formulate conclusions and produce appropriate reports for use by senior management in reporting to States and to the Board of Governors;
* As coordinating inspector, collaboratively evaluated related inspection results and collected information to inform future activities and inspections;
* Acted as a facility and country officer, provided technical and administrative coordination of the IAEA's safeguards in specified countries at specified nuclear facilities, and provided reports and updates to senior managers and key safeguards groups;
* Established relationships across the Department to form highly effective cross-Departmental teams to pool information from across the Department and draw credible safeguards conclusions for States;
* Performed other tasks related to the Unit's operation as may be assigned by the Unit and Section Heads

Date: 1988 - 1999.

Employer: (Public Service Commission) Radiation Protection Board, Ministry of Health

Position: **Senior Radiation Protection Officer at Job Group M**

**RESPONSIBILITIES:**

Regulatory aspects as defined in the Radiation Protection Act, Cap 243, Laws of Kenya and in particular:

* 1988 – 1989 was incharge of Nairobi Province performing registration of radiation sources and radiological facilities, inspecting the same to assure safe handling of radiation sources and irradiating devices, and enforcement of radiation monitoring program for radiation workers,
* 1989 to 1993 incharge for the whole country for maintenance of the registry upon notification of presence and use of radiation sources and radiological facilities. Inspection of the latter, attending Radiation Protection Board meetings before issuance of licenses to operators of radiological facilities;
* 1994 to 1996 implemented as team leader and local counterpart for the radioactive waste management technical co-operation project (TCP) with the IAEA. Among benefits accrued was the training of local human resources personnel with expertise in radioactive waste management of solid, liquid and gaseous; audit visits by experts accredited to IAEA and obtaining equipment. The secondary legislation on radioactive waste management spelling out guidelines on environmental impact assessment of disposal routes for various categories of radioactive wastes, methods for release of low level waste via incineration, lagoon/delay tanks and immobilization of solid waste was one main output of the TCP;
* 1996 to 1998 incharge of laboratory equipped with radiation detectors and carried out inspections, calibrated equipment and radiotherapy treatment facilities, performed quality assurance on irradiating devices used to medically expose patients, performed measurements of radiation levels in building materials, soil and drinking water from public utilities including springs, wells, boreholes and reservoirs.

**EDUCATION**

Dates: May 2009 – December 2013

University: University of Nairobi

Course: **PhD in Physics**

Dates: September 1994 – November 2000

University: University of Nairobi, KENYA

Qualifications: **MSc Nuclear Science**

Dates: September 1984 - December. 1987

University: University of Nairobi, Kenya

Qualifications: **BSc Physics**.

Dates: 1981 - 1982

School: Kangaru School, Embu, Kenya

Qualifications: **2-Principals and 2 Subsidiary passes in Advanced-level**

Dates: 1977 - 1980

School: Nakuru High School, Nakuru, Kenya

Qualifications: **Division One in Ordinary level**

Dates: 1970 - 1976

School: Shule Road Primary School, Nairobi, Kenya

Qualifications: **Certificate of Primary Education and 34 points**

**SCIENTIFIC PUBLICATIONS, CONFERENCE, WORKSHOPS AND TRAINING COURSES**

Book: **Radioecology of Carbonatites in the Mt. Homa Region in Southwest Kenya**

Press: Lambert Academic Publishing

When: July 2013*Publisher: LAP Lambert Academic PublishingPublisher: LAP Lambert Academic PublishingPublisher: LAP Lambert Academic Publishing*

Paper: **Estimation of annual effective dose and radiation hazards due to natural radionuclides in the Homa mountain, South Western Kenya**

Journal: Radiation Protection Dosimetry

When: March 2013

Paper: **Measurement of 222Rn concentration in Kenyan groundwater**

Journal: Health Physics

When: January 1998

Conference: **24th National Metrology Seminar (NMS 2017)**

Institution: Nyali Sun Africa Beach Hotel & Spa, Mombasa-Kenya

Duration: 6th to 8th December, 2017

Qualifications: Presented key note **Scientific Research for Industrial Development**

Conference: African Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology **(AFRA) Projects Counterparts workshop.**

Institution: NACOSTI hq, Nairobi, Kenya

Duration: 15th to 17th June 2017

Qualifications: Presented key note speech titled **Expectations and Opportunities for AFRA NC implementing Projects** (http://www.eaarp.org/events-2/)

Conference: **28th Technical Working Group Meeting (TWGM)**

Institution: Government of Uganda through the Ministry of Energy and Mineral Development

Duration: 17th to 21st July 2017

Qualifications: Presented Kenya’s participation in AFRA Projects

Conference: 44th **Science and Technology Park Training Pogramme**

Institution: Innopolis Foundation, Daejeon, South Korea

Duration: 15th to 26th May, 2017

Qualifications: Presented **National Physical Sciences Research Laboratory strategy**

Conference: **Mid-Term Coordination Meeting in Conjunction with the Taskforce Meeting Of the Regional Network of African National Nuclear Institutions (RENANNI)**

Institution: Egyptian Atomic Energy Authority, Sharm El Sheikh, Egypt

Duration: 19th to 23rd February 2017

Qualifications: Presented draft Strategic Action Plan for Kenyan NNIs

Conference: **Regional Experts Meeting to Review and Finalize the Training Materials for Preparing and Implementing Strategic Action Plans**

Institution: *Institut National des Sciences et Techniques Nucléaires*

(INSTN), Antananarivo, Madagascar

Duration: 17th to 21st October 2016

Conference: **Regional Workshop to train Managers/Strategic Planners from National Nuclear Institutions**

Institution: National Institute for Scientific and Industrial Research, Lusaka, Zambia

Duration: 8th to 12th August 2016

Conference: **Technologies and Socio-economic Development Achievement for realization of Kenya’s Vision 2030**

Institution: The Technical University of Kenya, Nairobi, Kenya

Duration: 24th to 27th June 2014

Qualifications: Presented key note speech titled Renewable Energies and fast Built Power Plants What is not told?

Conference: **Linking Environmental Research to Kenya’s Development Agenda and Vision 2030**

Institution: The Technical University of Kenya, Nairobi, Kenya

Duration: 10th to 12th April 2013

Qualifications: Presented key note speech titled Conventional and Alternative Energies: A Case for Nuclear

Conference: **11th Radiation Physics and Radiation Protection Conference**

Institution: Egyptian Atomic Energy Authority (EAEA), Cairo, Egypt

Duration: 25th to 28th November 2012

Qualifications: Presented paper titled Radioactivity and Dose Assessment of Rock and Soil Samples from Homa Mountain, Homa Bay County, Kenya

Conference: **7th African Conference on Research Reactor Utilization and Safety**

Institution: EAEA and IAEA, Cairo, Egypt

Duration: 14th to 15th October 2012

Qualifications: Presented paper titled Radioactivity and Trace Elements in Rock/ Soil Samples and Dose Assessment of the Public Residing near Homa Mountain, Homa Bay County, Kenya

Conference: **1st Annual International Interdisplinary Conference**

Institution: Catholic University of Eastern Africa, Nairobi, Kenya

Duration: 26th to 30th June 2012

Qualifications: Presented paper titled Assessment of Natural Radioactivity Concentration and Gamma Dose rate levels in Homa mountain, region of southwestern Kenya

Conference: **National Science, Technology and Innovation week**

Institution: National Council for Science and Technology, Nairobi, Kenya

Duration: 7th to 11th May 2012

Qualifications: Presented paper titled Assessment of Resident Farmer Gamma Dose Rate Levels in Homa Mountain, Homa Bay County, Kenya using Residual Radioactivity Computer Code

Conference: **2nd International Year of Chemistry**

Institution: University of Nairobi, Nairobi, Kenya

Duration: 15th to 17th February 2012

Qualifications: Presented paper titled Nuclear Energy and the role of Chemistry

Workshop: **Workshop on Technology Assessment of Small and Medium-sized Reactors (SMRs) for Near Term Deployment**

Institution: IAEA Headquarters, Vienna, Austria

Duration: 5th to 9th December 2011

Qualifications: Certificate of Attendance

Workshop: **Workshop on Construction Permit**

Institution: Radiation Protection Board and Nuclear Regulatory Commission, Mombasa, Kenya

Duration: 11th to 15th July 2011

Course: **Regional Training Course (RTC) on Leadership and Management for introducing and expanding nuclear power programmes**

Institution: Atomic Energy Commission, Sinclay, France

Duration: 27th June to 8th July 2011

Qualifications: Certificate on RTC on Leadership and Management for Introducing and Expanding Nuclear Power Programmes

Course: **Proposal, Thesis and Paper Writing**

Institution: Institute of Nuclear Science & Technology, UoN, Nairobi, Kenya

Duration: 19th to 23rd November 2007

Qualifications: Certificate on Training Course on Proposal, Thesis and Paper Writing

Course: **Improved Cerenkov Viewing Device**

Institution: CLAB Storage and Oskarshamn Nuclear Power Plant, Sweden

Duration: 18th to 19th (HQs, Vienna) and 23rd to 27th April 2001 (Sweden)

Qualifications: Certificate of Achievement in ICVD

Course: **Environmental Sampling**

Institution: Seibersdorf Laboratories, IAEA, Austria

Duration: 17th to 18th October 2000

Qualifications: Certificate of Achievement in Environmental Sampling

Course: **Non-Destructive Assay Inspector**

Institution: Los Alamos National Laboratories, New Mexico, USA

Duration: 8th to 18th August 2000

Qualifications: Certificate in NDA Techniques

Course: **Comprehensive Inspection Exercise**

Institution: IAEA HQs and PAKS Nuclear Power Plants, Hungary

Duration: September to October, 1999

Qualifications: Certificate of Achievement

Course: **Introductory Course on Agency Safeguards**

Institution: IAEA HQs, Vienna, Austria

Duration: May to October, 1999

Qualifications: Certificate of Achievement in 43rd ICAS

Course: **Radiation Protection for Safeguards Inspectors**

Institution: IAEA HQs, Vienna, Austria

Duration: 24th June and 5th – 6th June 1999

Qualifications: Certificate in RPSI

Course: **Safeguards Traineeship Programme**

Institution: IAEA HQs, Vienna, Austria; Germany and Hungary

Duration: February to November, 1998

Qualifications: Certificate of Achievement in 43rd ICAS

Course: **Enhanced Observation Skills**

Institution: IAEA HQs, Vienna, Austria

Duration: 21st to 25th September 1998

Qualifications: Certificate in Enhanced Observational Skills

Course: **Regional (AFRA) Training Workshop on Regulatory Compliance and Radiation Safety**

Institution: Council for Nuclear Safety, Pretoria, South Africa

Duration: 26th to 30th May 1997

Qualifications: Certificate in RTC on Regulatory Compliance and Radiation Safety

Course: **Regional Workshop on Standardization of Dose Measurements**

Institution: Seibersdorf/Vienna, Austria

Duration: 7th to 18th November 1994

Qualifications: Certificate in Standardization of Dose Measurements

Course: **Regional Workshop on Radioactive Waste Management**

Institution: Hot Laboratory & Waste Management Centre, Cairo, Egypt

Duration: 17th October to 4th November 1991

Qualifications: Certificate in Radioactive Waste Management

Course: **Safety and Regulation of Unsealed Sources of Radioactive Materials**

Institution: Trinity College, Dublin, Ireland

Duration: 19th June to 14th July 1989

Qualifications: Certificate in RT Workshop on Safety and Regulation

Course: **Regional Training Course for Radiation Protection Officers**

Institution: Nuclear Science Centre, University of Nairobi, Nairobi, Kenya

Duration: 8th August to 2nd September 1988

Qualifications: Certificate in RTC for Radiation Protection

**ADDITIONAL SKILLS & EXPERIENCE**

National Youth Service, Gilgil, Kenya (1984)

CID Training School, South C, Nairobi, Kenya (1991)

Nuclear Waste Disposal, Arizona, USA (1992)

Calibration of Radiation Detectors, Arusha, Tanzania (1994)

Founding member of the Eastern Africa Association of Radiation Protection, Kenya (1996) and current Chairman (2013-)

IAEA Computer Training in Word, Excel, Exchange, Netscape, Windows (1998)

Member of Kenya Community Abroad (1998) and current Board of Trustees (since 2010

Over twenty years’ accident-free driving experience

Founding Chair of Standards and Ethics Committee of Kenya Business Process Outsourcing and Contact Centre Society (2007-2011)

Participated in Kenya National Academy of Sciences Workshop whose theme was “Evidence based Advice to Policy’ (2008)

Interim Secretary of Society for Promotion of Applications of Nuclear Science (2009)

Course Director of Regional Training Course on Financing Energy Projects (2009)

Course Director of Regional Workshop on Establishing Self-Assessment Mechanisms and Capacities, Mombasa, (2010)

Board Member of Africa Utility Week (2013- )

Member of Physics Society of Kenya

**EXTRA-CURRICULAR ACTIVITIES**

Recreational Activities include game tracking.

Hobbies include wine sampling.

**REFEREES**

Available on request