

DOCKETED

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APP000018  
Submitted Sept. 29, 2011



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**Martha C. Williams**  
**Nuclear Material Control & Safeguards Consultant**

Summary

Martha Williams is a Nuclear Material Control and Safeguards Consultant to Talisman. Ms. Williams has recently been providing assistance to the government of the United Arab Emirates (UAE), under a subcontract with Lightbridge Corporation, in developing safeguards regulations, regulatory guidance, and a training program for safeguards inspectors for the UAE. Before joining Talisman she was a Senior Physical Scientist at the U.S. Nuclear Regulatory Commission (NRC) where she led the team inspecting nuclear material control and accounting (MC&A) at commercial power reactors and fuel cycle facilities. She has extensive experience developing systems to control and account for nuclear material at both the facility level and as a regulator.

Ms. Williams was the MC&A expert on the NRC team that investigated the loss of accountability for two irradiated fuel rods at Millstone Unit 1. Following the Millstone incident, she developed the NRC Temporary Instruction for inspecting control of nuclear material at power reactors and successfully trained and led the NRC team that inspected MC&A at all operating and decommissioning nuclear power plants. Following completion of the inspections, she developed the modules in the NRC reactor oversight program for inspecting MC&A at power reactors and established the significance determination process for failure to maintain a nuclear material control program.

Ms. Williams is a Member at Large on Accredited Standards Committee N15, Methods of Nuclear Material Control. She is chair of the ANSI N15.8 subcommittee. As chair of the ANSI N15.8, she led the team of NRC, Department of Energy, and nuclear industry representatives that wrote ANSI N15.8-2009, "Special Nuclear Material Control and Accounting Systems for Nuclear Power Plants," which was published by the American National Standards Institute in 2009.

Since January 2009 Ms. Williams has served at the invitation of the International Atomic Energy Agency (IAEA) as a United States representative on an International Experts Working Group that is developing guidance on establishing facility level systems and programs to control and account for nuclear material. The guidance document will be published as part of the IAEA *Nuclear Security Series*.

Education

M.S., Mathematics, East Tennessee State University



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B.A., Mathematics and Physics, Agnes Scott College

### Qualifications

**Material Control and Accounting** – Over twenty-five years of experience developing and implementing programs and systems to control and account for nuclear material, including:

- Management, procedures, training and qualification of staff
- Measurement systems and measurement quality control
- Nuclear material control systems
- Monitoring material during processing
- Nuclear material accounting
- Physical inventory
- Statistical analysis
- Evaluation of inventory differences at facilities processing nuclear material.

**Nuclear Security** - Developed and implemented standards for controlling nuclear material for the U.S. commercial nuclear industry, including both power reactors and fuel cycle facilities. Serves as a United States representative on the International Experts Working Group that is developing a guidance document for the IAEA Nuclear Security Series on countering the insider threat.

**Material Control Program Review** – Licensed, inspected, and developed material control systems for operating and decommissioning power reactors, uranium recovery operations, nuclear fuel fabrication and development facilities, and spent fuel storage sites.

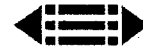
**Operational Readiness Review** - Conducted operational readiness reviews of material control programs at fuel fabrication facilities.

**Decommissioning** – Conducted inspections of decommissioning at fuel fabrication facilities.

**International Safeguards** – Provided assistance to Talisman’s client Lightbridge Corporation in developing safeguards regulations, regulatory guidance, and a training program for safeguards inspectors for the United Arab Emirates. Implemented standards of international reporting under the Nuclear Non-Proliferation Treaty at licensed facilities. Implemented the Additional Protocol to the Agreement with the International Atomic Energy Agency (IAEA) for the Application of Safeguards at licensed facilities.

**Communication** – Leader in Communication Teams at the NRC, promoting the importance of communicating with internal and external stakeholders. Received recognition for her “tireless efforts to enhance agency communications.” Leader in team that developed the first guidance on Preparing Communication Plans for the NRC Office of Nuclear Material Safety and Safeguards.

### Employment



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**Talisman International, LLC, 2009-Present**  
Nuclear Material Control & Safeguards Consultant

**U.S. Nuclear Regulatory Commission, 1988-1992 and 2000-2009**  
Senior International Safeguards Technical Analyst  
Senior Physical Scientist for Nuclear Material Control and Accounting

**International Atomic Energy Agency, 1992-2000**  
Safeguards Statistician

**Nuclear Fuel Services, 1980-1988**  
Statistics Manager  
Administrative Assistant to the Vice President for Technical Services  
Inventory Specialist

**East Tennessee State University and Steed College of Business, 1974-1980**  
Part-time Instructor, Mathematics and Statistics

**Honors**

Elected Fellow of the Institute of Nuclear Materials Management (INMM), 2007  
NRC Meritorious Service Award, 2005

**Security Clearance**

DOE Q Clearance

**Representative Publications**

Ms. Williams has lectured both nationally and internationally and presented numerous papers on the topics of material control and accounting and international safeguards. She also contributed definitions for Chapter 6, "Nuclear Material Accountancy" and Chapter 10 "Statistical Concepts and Techniques for Nuclear Material Verification" of the International Atomic Energy Agency's *Safeguards Glossary*, 2nd Edition.

Williams, Martha, and Connie Hall, "MC&A - The First Line of Defense against the Insider," Proceedings of the 52<sup>nd</sup> Annual Meeting of the Institute of Nuclear Materials Management, Palm Desert, California, July 2011.

Williams, Martha, et al., ANSI N15.8-2009, "Special Nuclear Material Control and Accounting Systems for Nuclear Power Plants," February 2009.

Weber, Michael, and Martha Williams, "The Path Ahead for Safeguards," *Journal of Nuclear Materials Management*, Autumn 2008.

Williams, Martha, "Safeguards Programs to Meet the Challenges of the Nuclear Renaissance,"



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Proceedings of the Tripartite Seminar on Nuclear Materials Control and Accounting, Obninsk, Russia, October 2008.

Williams, Martha, and Thomas Morello, "Revision of ANSI N15.8," Proceedings of the 8th International Conference on Facility Operations-Safeguards Interface, April 2008.

Williams, Martha, et al., "Material Balance Evaluation," International Atomic Energy Agency Safeguards Technical Report, June 2002.