

# Implementing a Modified Small Quantities Protocol in the

## U.S. Caribbean Territories

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### ABSTRACT

- Efforts to implement the modified Small Quantities Protocol (SQP) in the U.S. Caribbean Territories included:
  - Revision to the U.S. Nuclear Regulatory Commission (NRC) Title 10 of *Code of Federal Regulations* (10 CFR), Part 75.
  - Negotiation and implementation of the Subsidiary Arrangement (SA) and a Location Outside Facility Attachment (LOFA).
  - Outreach to NRC licensees impacted by the modified SQP (currently all located in Puerto Rico).

### BACKGROUND

- On April 6, 1989, *The Agreement between the United States of America (U.S.) and the International Atomic Energy Agency (IAEA) for the Application of Safeguards in Connection with the Treaty for the Prohibition of Nuclear Weapons in Latin America* entered into force, along with its original small quantities protocol (SQP).
- In 2016, the U.S. and the IAEA agreed to implement the modified SQP.
- On May 4, 2018, the NRC published 10 CFR Part 75 final rule, “Safeguards on Nuclear Material—Implementation of Safeguards Agreements between the United States and the International Atomic Energy Agency,” in order to meet the U.S. Government obligations under the Agreement.
- The rule became effective June 3, 2018. Licensee compliance with the final rule was required by July 3, 2018, and the LOFA initial material balance area physical inventory was submitted to the IAEA in a timely manner.
- On July 3, 2018, the Department of State notified the IAEA that legal requirements are in place to bring into force the modified SQP agreement in the U.S., consequently bringing the SA and LOFA into force.

### NUCLEAR MATERIAL REPORTING

- Possessors of Nuclear Material Outside Facilities (NMOF) as holders of nuclear material that is not in a facility, and is customarily used in amounts of one effective kilogram or less.
- The U.S. declarations and reports originating from these Possessors of NMOF are considered one location outside facility material balance area (MBA) (Figure 1).
- The annual physical inventory within the MBA is a composite of all nuclear material present at key measurement points assigned to each Possessor of NMOF.
- All imports/exports of nuclear material from outside the U.S. Caribbean Territories during the material balance period are reported annually using an inventory change report.
- Reporting codes outlined in the SA are captured under a MBA-specific cache in the U.S. national database for tracking nuclear material, the Nuclear Material Management and Safeguards System (NMMSS).
- Licensees provided an initial inventory report to NMMSS by August 20, 2018, and the report included their inventory as of July 31, 2018.
- This initial inventory report was submitted to the IAEA by August 30, 2018, after the modified SQP came into effect on July 3, 2018.

### OUTREACH TO U.S. NRC LICENSEES

- The NRC determined which licensees in the U.S. Caribbean Territories were likely to possess reportable nuclear material under the modified SQP, predominantly in Puerto Rico.
- In August 2016, the outreach team visited each of the licensees identified as potentially possessing nuclear material and documented the quantities and types of nuclear material present during the site visit (Figure 2).
- The identified source materials consisted primarily of depleted uranium, used for medical and industrial radiography shielding, and small laboratory-scale samples (such as uranyl acetate and uranyl nitrate) (Figure 3).
- In April 2017, NRC staff conducted a workshop, which included:
  - An overview of the history of the agreement between the U.S. and the IAEA for the application of safeguards in the U.S. Caribbean Territories.
  - Instructions and examples on completing the forms used to comply with the proposed reporting requirements (i.e. initial inventory report, material balance reports, and transaction reports).
- In May 2018, the NRC staff sent letters to the licensees in Puerto Rico to inform them that 10 CFR Part 75 final rule had been published.

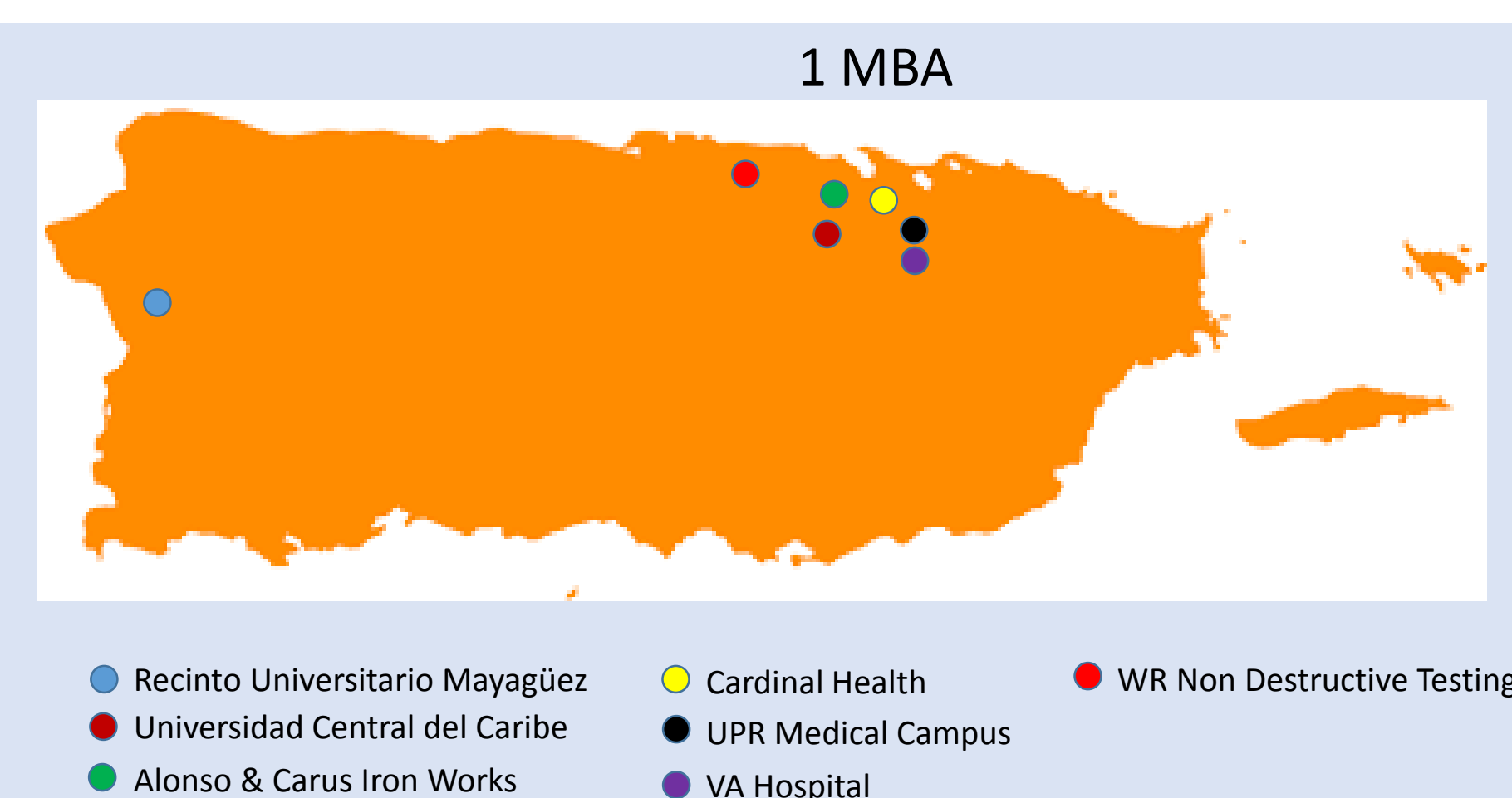


Figure 1. Possessors of NMOF in Puerto Rico are considered one location outside facility material balance area (MBA)



Figure 2. U.S. NRC Outreach to licensees in Puerto Rico



Figure 3. Sample of Source Material in Puerto Rico

### CONCLUSION

- Pursuant to Additional Protocol I to the Treaty of Tlatelolco and the Safeguards Agreement signed by the U.S. with the IAEA, a modified SQP was adopted due to minimal or no nuclear material or activities occurring in the affected U. S. Territories.
- The U.S. negotiated Subsidiary Arrangements and a LOF Attachment with the IAEA.
- To ensure consistent reporting and access under the requirements of the modified SQP, the NRC completed rulemaking to modify 10 CFR Part 75, “Safeguards on Nuclear Material-Implementation of US-IAEA Agreement.”
- The NRC reached out to the affected licensees in the U.S. Caribbean Territories in order to ensure effective and timely implementation of the modified SQP in July 2018.