

**Request for Approval under the “Generic Clearance for Participatory Science and  
Crowdsourcing Projects” (OMB Control Number: 2080-0083; EPA ICR Number: 2521.46)**

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**TITLE OF INFORMATION COLLECTION:**

**Radon Measurement and Mitigation Techniques in Puerto Rico**

**PURPOSE:**

The primary objective is to safeguard the communities of Puerto Rico from indoor radon risk through additional education, testing, and remedial actions as necessary. EPA in partnership with the University of Puerto Rico Mayaguez are enlisting the assistance of local government municipal leaders and community neighborhood leaders in Puerto Rico to participate with education efforts and communicating the announcement of the goals of the project. Local leaders are organizing participating homeowners requesting radon testing in their neighborhoods.

Homes in seven municipalities identified in the U.S. Department of the Interior, U.S. Geological Survey (USGS) report for Puerto Rico as having higher potential for elevated indoor air radon levels are about to undergoing a radon screening study as part of an ORD Innovations research project. The data developed from the current screening study will provide the basic information on local and regional potential health risks that may exist from radon exposure throughout the island. The data collected will provide seven-day integrated radon concentrations by location across Puerto Rico, as well as a radon map of the seven targeted municipalities with the ability to add more data points and more cities. Radon tests will follow recommendations in EPA's *A Citizens Guide to Radon* and ANSI standards of practice EPA will also provide GIS mapping resources; a train-the-trainer radon education program; and assist in developing key resources in collaboration with community leaders and student contractors.

Information gained by the current radon mapping project will be used for targeting confirmatory measurements of identified homes, targeting testing of occupied public buildings and schools in vicinities of impacted areas, and facilitate actual mitigation of existing structures. Results of additional testing to confirm radon concentrations will be performed under this project to expand the radon map from the current mapping project to include the more comprehensive testing results; remedial actions, photographic instructional captures, and associated costs and projections will be captured in the form of a collection of case studies to inform future phases.

The radon information collected from this project will be shared with homeowners and local municipalities officials on the results of radon concentrations in their properties, and to create a basic radon map of the municipality tested and any publicly available information collected will not identify the building address or the identity of the contact person. No other statistical analysis will be done

For future phases, this project can set the stage for development of cost-benefit estimates and counting lives saved through radon interventions in Puerto Rico, as well as development of Caribbean-specific mitigation recommendations of construction practices that document techniques that are effective given local structure, style and building materials, and recommended building code development to address radon during rebuilding or new construction, including in the US Virgin Islands.

#### **NEED AND AUTHORITY FOR COLLECTION:**

EPA in partnership with the University of Puerto Rico Mayaguez (UPRM) are enlisting the assistance of local government municipal leaders and community neighborhood leaders in Puerto Rico to participate with education efforts and communicating the announcement of the goal of this project. Local leaders are organizing participating homeowners requesting radon testing in their neighborhoods. The project aims to engage community or neighborhood leaders in Puerto Rico who will assist in organizing homeowners that are requesting testing in their neighborhoods; invest in the organizational aspects of a community-wide radon survey; commit to ensuring questions are passed on to the project leads. Citizen education is a project goal. UPRM project staff will be trained to provide radon informational materials and explain environmental test results to allow residents to better make decisions for themselves and their families; also, that local policy leaders can utilize the information obtained to make more informed decisions about the need for addressing radon during the rebuilding process. Procedural lessons learned can also help inform future projects in remote areas program; and assist in developing key resources in collaboration with community leaders and student contractors.

**USES OF RESULTING DATA: As stated above.**

Information gained by the current radon mapping project will be used for targeting confirmatory measurements of identified homes, targeting testing of occupied public buildings and schools in vicinities of impacted areas, and facilitate actual mitigation of existing structures. Results of additional testing to confirm radon concentrations will be performed under this project to expand the radon map from the current mapping project to include the more comprehensive testing results; remedial actions, photographic instructional captures, and associated costs and projections will be captured in the form of a collection of case studies to inform future phases. For future phases, this project can set the stage for development of cost-benefit estimates and counting lives saved through radon interventions in Puerto Rico, as well as development of Caribbean-specific mitigation recommendations of construction practices that document techniques that are effective given local structure, style and building materials, and recommended building code development to address radon during rebuilding or new construction, including in the US Virgin Islands.

**DATA COLLECTION METHODS:**

All UPRM student staff will first go through a training and certification process prior to the work beginning. All radon monitor placement and retrieval will be performed by UPRM or EPA team members. Each house will receive one Corentium Home Monitor (certified) which is started and runs for 7 days. At least 10 percent of homes will also receive one EPERM Monitor (certified) as a QA confirmation check. During each appointment one form is signed by the homeowner and kept by the student. One communication package form also is given to the homeowner. After seven days the student returns, retrieves monitor/s, informs and explains to occupant of

results, documents results on information sheet in writing and in databases. At UPRM all database requirement are completed and the process starts again. Results of additional testing to confirm radon concentrations will be performed under this project to expand the radon map from the current mapping project to include the more comprehensive testing results; remedial actions, photographic instructional captures, and associated costs and projections will be captured in the form of a collection of case studies to inform future phases.

**PARTICIPANT UNIVERSE:**

Category of Respondent	No. of Respondents	Number of responses per respondent	Participation Time per response	Burden Hours
Test Start & Stop	350	1	10 Min	58 Hours

**AGENCY COST:** The estimated annual cost to the Federal government is \_\_\_\_\_\$43,000\_\_\_\_\_.

The project is funded by a combination of two grants, the first for radon concentration measurement and the second for radon mitigation. Approximately 60% (or 30 K) of the first grant, and 100% (100 K) of the second grant is to be used for contractor support over a period of three years. The project time period has been extended due to the stoppage of field activity due to the pandemic. The total of 130 K will be used.

The project has also five (5) EPA staff working on the project as project leads, subject matter expert, and communications, and community relations coordinator. The total EPA's FTEs for this project is 0.25 FTEs

**STATISTICAL ANALYSIS:**

All UPRM student staff will first go through a training and certification process prior to the work beginning. All radon monitor placement and retrieval will be performed by UPRM or EPA team members. Each house will receive one Corentium Home Monitor (certified) which is started by UPRM staff and runs for 7 days. After 7 days the monitor is retrieved by UPRM staff. The monitor read-out is then recorded at the residence. At least 10 percent of homes will also receive one EPERM Monitor (certified) as a QA confirmation check. For Quality Assurance Testing duplicate or sequential testing with a certified device (such as E-Perm, Corentium Pro, RAD7) or alternate approved device will occur at a rate of 10% of all homes that demonstrated indoor radon levels of 4 pCi/L or higher. Those homes having duplicate measurement will have the monitor started and stopped by UPRM staff. After measurement completion the device will be analyzed with a certified reader and the results documented. If the results disagree with the

Corentium result, the home contact will be notified. Homes identified for interventions will be tested by the RAD7 after the interventions. An alternate approved device may substitute for the RAD7 if necessary; however, all efforts will be made to utilize the RAD7 for follow up sampling. See and Section 3.1 Sampling Design and 6.2 Quality Control Sampling for further QA details. All data collection monitors will be collected, disinfected and readings recorded by members of the Project Team. All measurement data will be documented in three separate databases.

- RadResponder Database – Cloud-based, official EPA radiological data database. Instrument database. Instrument assignments to Data Collectors (students), radon sampling results with corresponding coordinates, residential addresses, names, photos, comments, observations, maps (non-public access)
- Measurement Requests Database – information listing home address, contact person, phone, status (pending, in-progress, complete, follow-up). Each municipality is listed separately (non-public access)
- Measurement Instrument Log – Instrument measurement performance must be logged, each dual measurement identified and agreement tracked (PC backup to RadResponder), measurements implemented in professional Radon Report Manager database software Version 3.7.0, already installed and currently in use for E-Perm functionality checks (non-public access).

#### **DATA QUALITY ASSESSMENT PROCEDURES:**

The QAPP for Radon Measurement and Mitigation in Puerto Rico has been submitted EPA/ORD QA Track: G-AEMD-0032146-QP-1-0 and is currently under review/development. QA responsibilities has been assigned to Christine Alvarez, ORD QA Officer.

#### **ADMINISTRATION OF THE INSTRUMENT:** (Check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Web-based or Social Media | <input type="checkbox"/> Mail           |
| <input type="checkbox"/> Telephone                 | <input type="checkbox"/> Other, Explain |
| <input checked="" type="checkbox"/> In-person      |   |

**INSTRUMENT:** Append a copy of the questionnaire or a screen shot of the website or app that includes the information collection.

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