

Request for Qualifications
The University of California, Berkeley
Gill Tract Radioactive Decommissioning
EXTENDED DEADLINE — 14 DECEMBER 2007
Project # 19346A

Purpose:

The purpose of the RFQ is to obtain the services of a qualified radiological contractor to perform MARSIM and MASAME like surveys to facilitate the free release of the Gill Tract at the University of California – Berkeley (UCB). The contractor must possess a valid radioactive material license issued by the Nuclear Regulatory Commission or an Agreement State that will permit the contractor to possess and ship radioactive waste resulting from the closure process. The primary affected area is the Hybridoma Laboratory and adjoining storage. For further details see GILL TRACT RADIOLOGICAL HISTORICAL USE ASSESSMENT, posted below the main heading of this RFQ.

Proposal Elements and Format

Response to the RFQ shall be broken down with costs to reflect the details of the following sections:

- Radiological Survey and Sampling Plan (Decommissioning Plan)
- Labor, equipment and sample for the survey
- Decommissioning cost estimate
- Final Status Survey Report

Provide a schedule of rates for dismantlement, packaging, and disposal of wastes. This portion of the project will be contracted separately after the extent has been defined.

Detail a staffing plan proposed to be used at the project. Submit resumes of key personnel.

Provide a copy of the radioactive materials license you plan to use on the project and a commitment to secure reciprocity, if not a California licensee. All work will be performed under your license.

The successful firm will be required to sign the University's Professional Services Agreement, which is posted for review at <http://www.cp.berkeley.edu/PSA.pdf>.

Letters must be received at the address below no later than 4:30 pm, Friday, December 14th, 2007. After review, firms may be asked to provide more detailed information or may be invited for an interview. Please address submittals to:

Eric Ellisen
Capital Projects
University of California, Berkeley
1936 University Avenue, Room 232
Berkeley, CA 94704-7027

Questions may be addressed to Mr. Ellisen at 510-642-4690 or eellisen@cp.berkeley.edu. The University of California is an Equal Opportunity Employer. Every effort will be made to ensure that all persons, regardless of race, religion, sex, color, ethnicity and national origin have equal access to contracts and other business opportunities with the University.

Scope:

The successful contractor will be responsible for designing, developing, and implementing a MARSSIM like survey and sampling plan that will result in the State Radiological Health Branch approving an amendment to remove the Gill Tract from its California radioactive materials license. The contractor shall follow the following steps:

- As described in MARSSIM, four separate survey efforts will occur as follows:
 - Scoping survey;
 - Background reference area survey;
 - Characterization survey; and
 - Final status survey (if necessary).
- Develop a Radiological Survey and Sampling Plan (RSSP) that fulfills the requirements of both a characterization survey and final status survey.
- Perform radiological surveys of all areas identified by the HSA and scoping survey as having stored or handled radioactive material using appropriate instrumentation including surveys of comparable areas, not used to store or handle radioactive materials, to establish suitable background levels of radioactivity.
- Perform sampling and analysis of the soil and vegetation surrounding the Hybridoma Laboratory and the remainder of the Gill Tract.
- Analyze all data collected closely following the guidance in MARSSIM and NUREG 1757 and submit a written recommendation to the UCB Radiation Safety Officer (RSO) regarding unrestricted release of the Gill Tract.
- Remove equipment, surfaces, or components that are determined to be contaminated and process these items for final disposal at a licensed disposal facility.
- Ship all radioactive waste from the site adhering to the regulations in 49 Code of Federal Regulation (CFR)
- Develop a Final Status Survey Report (FSSR) consistent with the guidance contained in MARSSIM.

Historical Site Assessment (HSA)

The HSA has been completed and will be made available to the successful contractor.

Background Reference Area Survey

One of the most important components of the closure surveys is the selection of appropriately representative reference area background survey units. Each change in the survey unit substrate (i.e., linoleum, metal, concrete, etc.) requires a matching separate reference area survey unit since as the constituents change, the quantity of naturally occurring radioactive material also changes. To accurately account for these changes in background radioactivity, a separate background survey unit is used for the different survey unit constituents. Each background survey will consist of surveys identical to those proposed for the survey units. Physical measurements and background reference area surveys will be performed during the scoping survey.

Radiological Survey and Sampling Plan (RSSP)

The contractor will develop an RSSP that will detail the methodologies to be followed during performance of the final status survey. The RSSP is a planning document that will be used to describe the types, methods, controls, survey design, and data analysis for the Characterization/Final Status Surveys. The survey philosophy contained in the RSSP will be based upon guidance contained in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), Revision 1; NUREG 1757 Volumes 1 and 2; and NUREG 1507.

Data Quality Objectives (DQOs) and Derived Concentration Guideline Levels (DCGLs) will be developed during preparation of the RSSP. The RSSP survey design will use surface scanning of building surfaces, collection of beta static measurements, and collection of beta swipes.

The format of the RSSP shall follow the requirements of the State of California Code of Regulations (CCR) 17 CCR s 30256. A cover letter or section in the RSSP shall be dedicated to specifying where in the plan each requirement of 30256 has been addressed.

Data Quality Objectives (DQOs)

One of the first steps when developing a RSSP is development of Data Quality Objectives (DQOs). The DQOs will be used to improve the survey effectiveness and efficiency and to assure that the type, quantity, and quality of data used in decision making will be appropriate to ensure release for Gill Tract Hall. The DQOs will define the criteria that the survey design should satisfy, including when and where to perform measurements, the level of decision errors (Type I and Type II) for the survey, and how many measurements to perform.

Derived Concentration Guideline Level (DCGL) Development

The DCGL for the unrestricted release of Gill Tract will be established to assure no residual radioactivity statistically different from a calculated exposure of 1.0 mrem per year remains in the building or in the surrounding environment.

Survey Unit Classification

Based on information provided in the HSA the contractor will determine the appropriate classification for the individual survey units following the guidance contained in MARSSIM. In the event that data obtained during the scoping and/or characterization/final status surveys indicates the need to reclassify any areas, a technical assessment supporting the change in classification will be submitted to the UCB RSO.

Final Status Survey Design

Characterization/Final Status Surveys will consist of:

- Alpha, Beta, and Gamma static measurements;
- Beta and Gamma scanning of floor surfaces (an appropriate percentage to be determined after initial area classification);
- Beta wet swipes for determining loose surface contamination.
- Dry swipes for determination of alpha and gamma loose surface contamination.
- Soil samples of surrounding land and the planting plots

Areas surveyed will include those with the highest potential for contamination including the following:

- Floors;
- Walls above sinks;
- Laboratory sink traps and sink lips;

- Fume hoods;
- Air intake and exhaust vents;
- Laboratory benches and bench lips;
- Floor drains; and
- Hot lab ducting
- Equipment such as refrigerators and freezers

The number of samples collected from floor surfaces will be determined following MARSSIM guidance using non-parametric tests and the potential for hot spots. Additional biased samples will be collected from the high-risk areas listed above.

RSSP Submittal

The Draft RSSP will be submitted to the UCB RSO for review and comment. The contractor will meet with the UCB RSO to discuss comments. Once comments have been incorporated, the contractor will prepare a Final RSSP. As part of the RSSP the contractor will develop an investigation level with protocol for step outs if the level is exceeded. The RSSP will be submitted for review to the State Radiologic Health Branch. The RSSP will contain a section that details how it meets the requirements of 17 CCR 30256.

Characterization/Final Status Survey

Once the RSSP has been approved, the contractor will perform the radiological surveys following the methodologies outlined in the RSSP and analyze the results to determine compliance with approved release criteria. The contractor will provide all equipment and personnel necessary to complete the surveys. Any concerns identified during the analysis of the survey data will be discussed with the UCB RSO to determine a course of action.

The Characterization Survey will be designed so as to meet the requirements for the Final Status Survey. In the event the Characterization Survey results indicate that the area could be released for unrestricted use, no further survey work will be necessary. The Characterization/Final Status Surveys will follow the guidance contained in the RSSP. The primary objectives of the Characterization/Final Status Survey will be to:

- Verify correct survey unit classification;
- Demonstrate that the residual contamination is below the release criterion for each survey unit; and
- Demonstrate that the potential dose or risk from small areas of elevated activity is below the release criterion for each survey unit.

Analyze Data

All data collected will be analyzed following guidance contained in MARSSIM and NUREG 1757. Data will be analyzed for completeness and to ensure that residual radioactivity levels meet the release criterion (DCGL) for each survey unit. To assist in this analysis, the Wilcoxon Rank Sum Test (WRS) will be used as recommended by MARSSIM, if necessary. As part of the data interpretation process, all scanning, static measurement, and swipe sample data collected by the field personnel will be reviewed by the contractor's Health Physicist (HP) experienced in D&D review. The HP will approve contractor work plans and oversee the in-house QA/QC function. The HP will review the results to ensure the data gathered is consistent with the RSSP. The HP will also review the minimum detectable activities achieved during the scanning efforts and the scanning data to ensure data of sufficient sensitivity are collected. A recommendation regarding unrestricted release of the affected areas will be submitted to the UCB RSO.

Decontamination and/or Removal of Contaminated Material

In the event that contamination is identified during any of the surveys the contractor will be responsible for decontamination of areas or items identified as exceeding the DCGL. The contractor will be responsible for the proper shipping and disposal any waste generated as part of the decontamination at a licensed burial facility.

Final Status Survey Report (FSSR)

After the analysis of final status survey data is complete, the contractor will develop a FSSR consistent with the guidance provided in MARSSIM and NUREG 1757. In general, the FSSR will substantiate the recommendation regarding unrestricted release of potentially impacted survey units.

The results of all investigations will be documented in the FSSR, including the locations and results of initial surveys as well as any follow-up surveys that may have potentially identified areas of elevated radiation. The results of the investigation of the measurements that exceed the investigation level and the basis for reclassifying all or part of a survey unit as Class 1 or Class 2, if necessary, will be included in a technical assessment submitted to the UCB RSO and in the final status survey report.

The FSSR will document the final status survey activities by providing detailed information. A sample table of contents for the FSSR follows:

EXECUTIVE SUMMARY

- 1.0 Introduction and Background
 - 1.1 Site History/Description
 - 1.2 Radiological Contaminants of Concern
- 2.0 Survey Units and Classification
 - 2.1 Survey Unit Designation
 - 2.2 Survey Unit Classification
- 3.0 Mechanism of Release
 - 3.1 DCGL Determination
 - 3.2 DCGL Comparison
- 4.0 Background Determination
- 5.0 Site Survey Techniques
 - 5.1 Scanning Surveys
 - 5.2 Static Measurements
 - 5.3 Swipe Survey
 - 5.4 Instrumentation
- 6.0 Minimum Detectable Activity Determinations
 - 6.1 Static Minimum Detectable Activities
 - 6.2 Swipe Minimum Detectable Activities
 - 6.3 Scanning Minimum Detectable Count Rate
- 7.0 Data Interpretation Procedures
 - 7.1 Static Measurements (includes assessment using statistical tests, if necessary; verification of correct sample number calculation; Type I and Type II error rates, etc.)
 - 7.2 Scanning Data
 - 7.3 Swipe Sample Results
 - 7.4 Data Quality Objective Review
- 8.0 Survey Results
 - 8.1 Scanning Survey Data
 - 8.2 Static Measurement Data

8.3	Swipe Measurement Data
9.0	Conclusions and Recommendations
10.0	References
Appendix A	Instrument Calibration Certificates
Appendix B	Static Data
Appendix C	Scan Data
Appendix D	Swipe Data
Appendix E	D and D Soil Sample Dose Assessment
Appendix F	Minimum Detectable Activity Minimum Detectable Count Rate

All supporting information (i.e., instrument calibration and source checks, completed radiation surveys, survey unit figures, graphics, photographs, MDA/MDCR calculations, etc.) will be included in the FSSR. Calculations of the MDA/MDCR shall follow the guidance contained in MARSSIM and NUREG 1505.

The Draft FSSR will be submitted to the UCB RSO for review and comment. Once UCB RSO comments have been incorporated, the contractor will prepare a Draft Final FSSR for submittal to the California Department of Public Health (DPH) for review and comment.

Contractor Health and Safety Program

The contractor shall prepare a project-specific safety plan that addresses personal protective equipment (PPE) to be worn by all contractor personnel and will describe the methodology for monitoring their exposure during completion of work under this contract.

The contractor will implement its radiation protection program to the extent that it meets or exceeds all radiation safety requirements imposed by the State of California and the University of California's Radioactive Materials License (RML).

Schedule

The contractor shall submit a proposed schedule for the project. The schedule shall address and meet the following milestones:

- Initiation of the RSSP (selection of contractor) by December 21, 2008
- Draft RSSP to UCB by January 15, 2008
- Completion of final RSSP and submission to State DPH by February 15, 2008
- Initiation of surveys, decontamination, and waste shipments to be determined
- Completion of Surveys, decontamination, and waste shipment dates to be determined
- Completion of the final FSSR dates to be determined