GFO-16-508

Natural Gas Storage Infrastructure Safety and Integrity Risk Modeling Research Grants

California Energy Commission

Pre-Application Workshop: January 26, 2017

Pre-Application Workshop Questions and Answers

State of California

California Energy Commission

http://www.energy.ca.gov/contracts/index.html

1. **Question:** The Stage 1 screening criteria require (p. 32) identification of "one or more demonstration or deployment site locations." Is it the expectation of the California Energy Commission that the tool, method, or approach developed in a funded project will be demonstrated at a host site as part of the project? Or, is it necessary only to identify a "demonstration or deployment site" location where a demonstration *could* take place in future – for example, undertaken by the site owner.

   Answer: Yes, it is the expectation of the California Energy Commission that the tools, methods, or approaches developed in a funded project should be developed, tested, vetted and demonstrated at the identified host site as part of the project.

2. **Question:** The solicitation notes that the "gas storage infrastructure includes various critical system elements such as gas supply pipelines, compressors, valves, sensors, and injection and recovery wells." Does the California Energy Commission have a preference as to whether the projects focus on specific elements of the infrastructure (e.g. injection and recovery wells) or are more broadly crosscutting (e.g., covering both surface and subsurface infrastructure)?

   Answer: Various critical system elements noted in the solicitation are for illustrative purpose only. It is not an exclusive list of all critical elements. The California Energy Commission does not have a preference as to specific elements of the infrastructure to be covered in the risk model. However, it is up to the applicant to propose a project that is comprehensive enough and covers most critical elements and known and unknown threats. The risk model must be capable of providing sufficient and enough useful information to utilities, operators and regulators to make the natural gas storage infrastructure safe and reliable and prevent catastrophic events.

3. **Question:** What is the boundary of natural gas storage infrastructure? Where does the natural gas storage infrastructure end, e.g., with respect to supply/transmission pipelines?

   Answer: In general, the natural gas storage infrastructure (system) boundary should begin with the entry point of gas supply to the gas storage facility and end with the exit point of gas supply from the gas storage facility. This could also include the geological, geographic, jurisdictional, and physical boundary of the natural gas storage facility. However, the applicant must define specifically and clearly the system boundary for developing the risk assessment model and tools in the proposed project.

4. **Question:** How does California Energy Commission envision the role of human factors in the new Risk model?

   Answer: To the extent any and all human factors can be a threat to the safety and integrity of the natural gas storage infrastructure, these factors should be included in the risk model.

5. **Question:** It is mentioned that known and unknown threats must be captured in the risk model. Assessing unknown threats is the focus of risk management rather than assessment. Does California Energy Commission want the new model to focus on management aspects of the risk also?

Answer: Yes, the proposed project for developing a risk model should also include the management aspects of the risk.

6. **Question:** Should the new safety and integrity risk model capture all categories of uncertainties?

   Answer: Yes, the proposed safety and integrity risk model should capture all categories of uncertainties.

7. **Question:** Consequence of failure is a big element in any risk assessment, how deep should proposals focus on the Consequence assessment?

   Answer: The proposed project should include assessment of consequences also in order to provide enough useful and comprehensive information to utilities, operators, and regulators for making the appropriate decisions to make the natural gas storage infrastructure safe and reliable. The proposal should define how deep the proposer considers as being necessary to meet the overall objectives of the proposal.

8. **Question:** Does the new risk model need to comply with all the referenced regulations in the GFO document?

   Answer: Yes, the proposed project risk model needs to comply with the referenced regulations and any other relevant regulations. The referenced regulations are as an illustration only. It is not an exclusive list of all regulations. The applicant is expected to have thorough knowledge and understanding of all relevant regulations while preparing the application. Also, the applicant is expected to research further all relevant and applicable regulations as well as any potential regulations expected to be promulgated in a reasonable future time (i.e., 2-4 years) in California and nationally in order to make the natural gas infrastructure safe and reliable.