Off-Riser Sampler System

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Development of Off-Riser Sampler System (ORSS)

Overall Needs:

- A system designed to collect waste samples from multiple locations within the challenging and constrained environment of a Single Shell Tank at the Hanford site.

Objectives:

- The capability to sample a diverse range of waste types and forms.
- Designed to achieve a reach of 3 to 6 feet from deployment zone.
- Capable of being remotely and precisely controlled from outside the waste tank.
- Ensuring the system is "spark-proof" to mitigate the risk of fire within the tank.
- The capability to safely store the sample and retrieve the waste without retracting the system.
- Sufficiently resilient and robust to withstand the tank's conditions and operating load during sampling operations.
- Easily deployable and retractable from the tank in the event of a failure.

WRPS Summer 2024 Internship

FIU-WRPS ORSS Internship Highlights:

Figure 1. July 16 WRPS Demonstration

Figure 2. ORSS Scoop Sampler

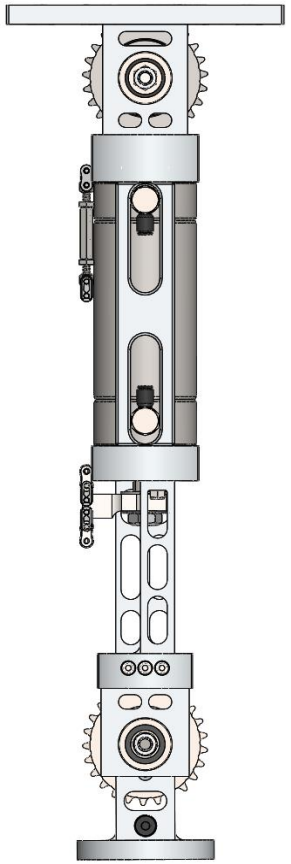

Figure 3. ORSS Joint 1 CAD Model

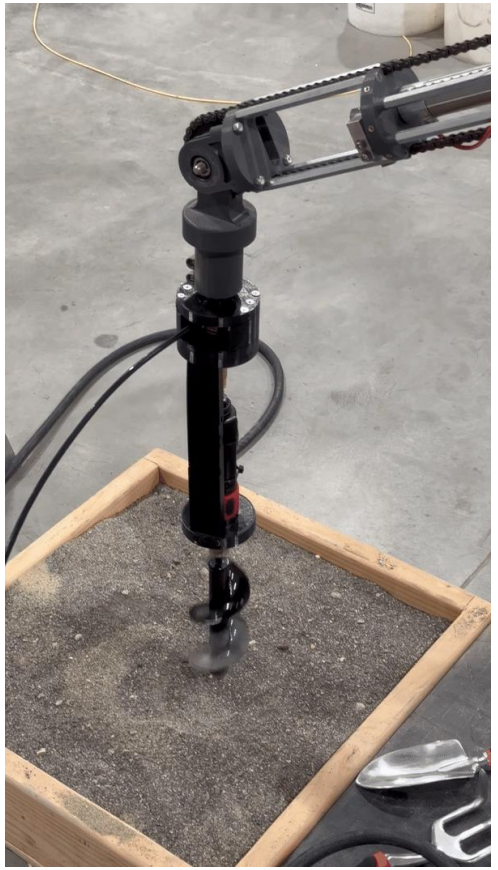

Figure 4. ORSS Auger Tool

Path Forward

- Continued development of the ORSS
  - Optimization of the controls
  - Creation of the next design iteration
- Transitioning from an undergraduate to a graduate program in mechanical engineering at FIU

Figure 5. ORSS at Full Extension

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Acknowledgments

- Mr. Anthony Abrahao
- Mr. Mackeson Telusma
- Dr. Leonel Lagos
- Dr. Ravi Gudavalli

- DOE-FIU Science and Technology Workforce Development Program

- Sponsored by the U.S. Department of Energy, Office of Environmental Management, under Cooperative Agreement #DE-EM00005213.

Thank You. Questions?