



Contribution ID: 162

Type: Oral

## Robotically-deployed NDE inspection development for dry storage systems for used nuclear fuel

*Tuesday, 25 June 2019 11:40 (20 minutes)*

Dry Storage Systems are used as an onsite storage method for used nuclear fuel. Since no country currently has an operable repository, it will be essential for many countries around the world to extend the period of operation for these systems. Nondestructive evaluation (NDE) inspections are needed to verify continued safe operation of these dry storage systems; however, elevated temperatures, dose rates, and confined entry/exit all pose unique challenges for deployment of NDE techniques as a part of aging management requirements for these dry storage systems. Therefore, robotically-deployed in situ NDE systems and techniques have been developed to address these challenges. Field trials have been conducted to evaluate the feasibility and improve the functionality of the NDE and delivery systems in real-world environments. This paper describes development of the NDE systems, presents laboratory tests on flawed mockup specimens, and highlights field trial efforts to refine the NDE and delivery systems for deployment with dry storage system inspections.

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### Country or International Organization

United States of America

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**Session Classification:** Session 2.2

**Track Classification:** Track 2: Spent Fuel and High Level Waste storage and subsequent transportability