Dominion Engineering, Inc.

Non-Intrusive Ultrasonic Decontamination (NU-DEC™)

Description

NU-DEC™ (Non-Intrusive Ultrasonic Decontamination) is a patented system and process for removing deposits and solidified sediment present in piping systems, tanks, and other components with no need to open, enter, or insert equipment inside the component being decontaminated.

The NU-DEC™ equipment system includes:

- Ultrasonic power unit
- Transducer clamps and arrays for small and large bore piping (and vessels)
- Air compressor (cooling air)

Applications

Because NU-DEC™ uses non-intrusive methods and does not produce secondary wastes, it is a versatile and cost effective tool for decontamination activities at both operating and decommissioned facilities. Applications include:

- Removal of crud build-up in slow moving drain lines.
- Corrosion product reduction in radioactive systems such as RWCU that contribute to general area dose rates.
- Reduction of radioactive deposits in decommissioned facility systems to reduce dose rates and waste handling requirements.

Features and Specifications

- Able to clean 3 to 5 ft of axial piping from one installed location.
- Very portable and only requires electrical power in field applications (for power unit and air compressor).
- Cleaning time is typically less than 10 minutes and can be repeated as needed.
- Detailed engineering analysis provided to ensure structural qualifications are not impacted.
- Compatible with small and large bore piping.

Industry Experience

- 90% reduction in contact dose rates of RCS piping at non-US PWR (to support decommissioning)
- 3-4X reduction in general area dose rates at operating US BWR (supporting elimination of LHRA)
- Restoration of degraded radwaste cement solidification system (allowing return to like new processing performance)

NU-DEC™ cleaning results
(radwaste cement solidification system vessel)

NU-DEC™ pipe decon application at US BWR

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