



DECON SERVICES

QDS SOLUTION™



Master-Lee Decon Services, Inc. utilizes Quick Decon Solution™ (QDS) to significantly reduce both time and personal dose associated with all decontamination efforts and tasks. QDS™ is an ionic-focused solution designed to effectively remove contamination. When applied to a contaminated surface, the proprietary solution lifts radioactive material, suspending it within the solution, where it can be easily wiped or rinsed away as radioactive waste. QDS™ has a proven track record of reducing time and dose on critical path tasks. Master-Lee is the Exclusive Distributor for QDS™ in the Nuclear Market, further strengthening its position as a leader in innovative decontamination solutions.

Quick Decon Solution™ – Key Features

- Safe & Quick ionic-infused solutions for removal of contamination
- Effective on 63 different elements
- ~80%-90% reduction on 1st pass*
- Non-Toxic & environmentally friendly
- Water-based and “Resin Bed Friendly”
- Cost Effective
- Available in Pre-moistened wipes for tool decon
- 10-year Shelf Life

Product Description

- Available in powdered form, each package mixes with DI water to make 1 gallon of QDS™ solution
- Each ion-specific formula targets a chemical group:
 - Transition Metals (TM)
 - Actinides (A)
 - Halogens (H)
- Free of soaps/surfactants – safe for wastewater resin systems.

Radioactive Systems & Other Applications

- Tank Decon
- Reactor Cavity
- Tool Decon

The Process – Reactor Cavity Decontamination

1. RP to perform radiological surveys (Pre-Decon).
2. Pre-stage QDS™ Solution typically in bug sprayers.
3. Begin decontamination of the bathtub ring as the cavity drains.
4. Apply QDS™ solution at the 7' mark of walls and floor.
5. Typically utilize a 5K psi electric pressure washer to assist in decon, apply additional solution if needed



*Significant Reduction in
Critical Path Time & Dose*



*Non-Toxic, Environmentally
Friendly & Safe on Skin*



*Simple & Cost Effective
ALARA Solution*

MASTER-LEE DECON SERVICES

5631 Route 981 - Latrobe - PA – 15650

Phone: 724.539.8060 - Fax: 724.532.5501

Email: mlds-sales@masterlee.com

RT 
Technologies

Exclusive Distributor

QDSTM SOLUTION: Business Case (3 Hours Critical Path Saved)



Date: Jan 6, 2026

Executive Summary

Refueling outages at U.S. nuclear plants typically cost about \$1.2M/day in lost generation (\approx \$50k/hour) and commonly exceed \$1,000,000/day per industry reporting. Implementing QDS could reduce Reactor Cavity Decontamination by 3 hours, all on the outage critical path, yielding \$126,000–\$150,000 savings per outage. At a one-time investment of \$33,750, the *QDS Outage Decon Package* could show a net benefit of \$92,250–\$116,250 with an ROI of 273%–344% with the same-outage payback.



QDS Outage Decon Package Includes

- 50 one-ounce packets of QDS Powder (1 packet = 1 gallon of solution)
- 25 individually wrapped wipes pre-soaked with QDS Solution

Qualitative Benefits

Operational: faster turnover to fuel movement, lower risk of cascading delays, stronger schedule resilience.
Safety & ALARA: reduced manual scrubbing, lower worker dose, cleaner inspection environment.
Regulatory/Performance: supports INPO benchmarking, outage duration targets, cost-per-MWh competitiveness.

Parameter	Low Case	Benchmark Case
Outage cost per day	\$1,000,000	\$1,200,000
Hourly critical-path value	\$42,000	\$50,000
Critical-path hours saved	3	3
Total savings	\$126,000	\$150,000
QDS Outage Decon Package investment	\$33,750	\$33,750
Net Benefit	\$92,250	\$116,250
ROI	273%	344%
Payback timing	< 1 outage, ~36 minutes saved	< 1 outage, ~40 minutes saved

References

References: (1) Idaho National Laboratory, LWRs Program, Outage Optimization Report (Sept 2024) — representative lost generation \sim \$1.2M/day. (2) ANS / Nuclear Newswire (Sept 26, 2025) — refueling outages can easily exceed \$1M/day.

MASTER-LEE DECON SERVICES
5631 Route 981 - Latrobe - PA – 15650
Phone: 724.539.8060 - Fax: 724.532.5501
Email: mlds-sales@masterlee.com

RT
Technologies
Exclusive Distributor