

N225. LOMI Decontamination of Nuclear Reactors Reduces Exposure and Critical Path Time

Benefits:

- Since adopting the low-oxidation-state metal-ion (LOMI) decontamination process in 1984, U.S. utilities have saved \$132 million through reduced radiation exposure.
- LOMI is benign to reactor structural materials, requires less critical path time than other processes and, through lower residual radiation fields, allows lengthy repairs or refurbishments and longer use of most skilled workers.

Comments:

"Chemical decontamination was the major reason we were able to reduce worker occupational radiation doses to levels that were as low as reasonably achievable, as well as limit the collective dose." (Mark Miller, Philadelphia Electric Co.)

"LOMI decontaminations performed at FitzPatrick yielded high man-rem savings. Hydrogen water chemistry and zinc injection did not alter the effectiveness of LOMI." (Jeff Goldstein, New York Power Authority)

"LOMI has been used 15 times to reduce radiation exposures in Commonwealth Edison's BWRs." (Commonwealth Edison Co.)

Calculated Value of LOMI Decontamination

Plant	Application Date	Savings ^a (man-rem)	Expense s (\$ million)	Net Saving (\$ million)
Dresden 3	1,985	2,400	0.6	23.4
Indian Point 3	1,985	327	0.6	2.48
Quad Cities 1	1,986	400	0.6	3.4
Quad Cities 2	1,986	400	0.6	3.4
Dresden 2	1,986	400	0.6	3.4
Oyster Creek	1,986	720	2.7	4.5
Quad Cities 1	1,987	NA	0.6	-
Peach Bottom 3	1987-8 8	1,610	1.3	14.8

Quad Cities 2	1,988	460	0.6	4
LaSalle 1	1,988	3.46	0.6	2.86
LaSalle 2	1,988	411	0.6	3.5
Dresden 2	1,988	NA	0.6	-
FitzPatric k	1,988	673	1	5.73
Quad Cities 1	1,989	584	0.6	5.24
LaSalle 1	1,989	128	0.6	0.68
Quad Cities 2	1,990	562	0.6	5.02
Dresden 2	1,990	2,000	0.6	19.4
Quad Cities 1	1,990	411	0.6	3.5
Oyster Creek	1,991	625	5.45	0.8
Monticell o	1,991	400	0.7	3.3
Brunswic k 2	1,991	331	0.8	2.51
Duane Arnold	1,991	64	-	0.64
Quad Cities 2	1,992	513	0.6	4.53
Browns Ferry 3	1,992	800	0.8	7.2
FitzPatric k	1,992	350	1	2.5
WNP-2	1,992	~300	-	3
Grand Gulf	1,992	138	-	1.38
River Bend	1,992	Analysis still in progress		
Total net saving (\$ million)			132.07	

⁽¹⁾Utility benefits include the avoided radiation exposure.

Taken from, "LOMI Decontamination of Nuclear Reactors Reduces Exposure and Critical Path Time," Innovators with EPRI Technology information sheet IN-101220, December 1992. For more information, contact Chris Wood, Project Manager, EPRI, Phone (415) 855-2379.