

# BNL ALARA Center Data Base

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## STATUS REPORT ON BWR FULL SYSTEM DECONTAMINATION

**Keywords:** CONTAMINATION REMOVAL; FULL SYSTEM  
DECONTAMINATION; LOMI; BWR; DECONTAMINATION

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**Objectives:** BWR FSD Program Objective - initial evaluation of the feasibility of a FSD of a BWR (with fuel removed) using the LOMI process with specific emphasis on:

- 1) Long term materials compatibility and performance
- 2) LOMI process review and system interaction/flow paths
- 3) Radwaste management
- 4) Recontamination and dose savings
- 5) Cost benefit analysis
- 6) Safety review and licensing

**Comments:** Summary of Corrosion Data on LOMI, AP/LOMI, and NP/LOMI:

LOMI

- No BWR plant or fuel material has been identified to be incompatible with LOMI
- LOMI does not cause IGA or IGSCC, nor does it exacerbate existing IGA or IGSCC
- LOMI does not effect IGSCC UT detectability

AP/LOMI

- No crack extension in precracked stainless clad low alloy steel
- No corrosion of irradiated fuel materials
- No IGA or IGSCC in stainless steel or nickel-base alloys
- Cracking/corrosion of Cr plated parts
- Westinghouse study in AP-LOMI-AP-LOMI at higher temperatures, concentrations, and times:
  - IGA on 17-4 pH and type 410 SS
  - shallow pitting of many alloys

NP/LOMI

- Crack extension in pre-cracked stainless clad low alloy steel
- IGA on welded 316L/321, FS A600 U-bends
- IGA of FS 304
- Enhanced crack growth (~30x) in SA508-2

**Remarks/Potential for dose limitation:** GE Nuclear Energy Engineering Positions on LOMI and Oxidation Step Options:

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LOMI - The risks associated with the application of LOMI for FSD of BWRs with the fuel removed appears to be very low provided that the process is applied in accordance with the approved process specifications.

AP - The application of AP for FSD of BWRs appears promising. However, additional testing is required before AP can be approved for FSD. For non-FSD applications, AP should be evaluated on a case by case basis.

NP - The application of NP for FSD of BWRs is not acceptable. For non-FSD applications, NP should be evaluated on a case by case basis.

**References:** Gordon, B.M., "Status Report on BWR Full System Decontamination," *Radiation Field Control Seminar*, Electric Power Research Institute, Seattle, Washington, 1993.

**Duration:** from: 1992 to: 1993

**Funding:** N/A

**Status:** Completed

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