

## Selective bibliography on live washing of insulators

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- 1 BUFFET, *et al.*: 'Playing fire-hoses on live conductors', *RGE*, 1934, **36**, pp. 305–316  
An early analysis of leakage along water-jets of different conductivities. Table shown of safe distances.
- 2 HOLMSTROM, G.: 'Spraying of live line with sea water', *Brandkaarstidskrift*, 1937, **19**, pp. 189–196  
Safe spraying distances using sea-water. (If Baltic water, much lower conductivities than from normally encountered salinities.)
- 3 ESTORFF, W., *et al.*: 'Water cleaning of live HV equipment', *ETZ*, 1940, **61**, pp. 817–827  
Use of high pressures to break jets up into sprays. Details of nozzles.
- 4 EARDLEY, M.V.: 'Insulators washed on energised 132 kV line', *Elect. World*, 1944, **121**, pp. 78–80
- 5 BREMNER, W. C., *et al.*: 'Live 220 kV line insulators washed to stop leakage', *Elect. World*, 1944, **122**, pp. 90–92  
Use of high-pressure jet washing to combat, not flashover, but leakage currents causing pole fires.
- 6 HILL, G. L.: 'Test developments with hot-line washing', *AIEE Trans.*, 1947, **66**, pp. 1203–1216  
Recommends maintaining solid jet to impact point on insulator. Opposed to Reference 3.
- 7 POGGENDORF, A.: 'Cleaning live HV equipment with built-in sprinkler systems', *Elek. Wirts.*, 1951, **50**, pp. 31–36  
Experience over 10 years with built-in sprinklers.
- 8 DANISH POWER ASSOCIATION COMMITTEE: 'Water spray appliances', *Elektroteknikerens*, 1952, **48**, pp. 101–109  
Good account of involuntary live washing by agricultural spray plants. The hazards for 110 kV lines.
- 9 ALLEN, H. L.: 'Insulator washing by remote control', *Elect. Light & Power*, 1952, **30**, pp. 119–122  
Hydraulic telescopic crane for pole-top washing at 66 kV.
- 10 KIAY, H.: 'The trajectory of water particles during spray tests on insulators', *ASE Bull.*, 1954, **45**, pp. 693–696  
Demonstration of large effects of electric fields around insulators on droplet trajectories.
- 11 DEJUHASZ, K. J.: 'Spray literature abstracts', 1959. (Amer. Soc. Mech. Eng., NY, 1959)  
1300 entries on many aspects of sprays.
- 12 BAATZ, H.: 'Spraying of HV lines with fire hoses', *ETZ B*, 1960, **12**, pp. 333–337  
Jet must be atomised before striking insulator, for 110 kV.
- 13 FEDOTOV, M. P.: 'Cleaning live insulators by intermittent water jets', *Elek. Stanstii*, 1962, **6**, pp. 66–69  
Recognises advantages of 'slugs' of water rather than solid jets or sprays.

- 14 LANE, J.: 'Live line insulator washing successful on EHV', *Elect. World.*, 1963, **160**, p. 104  
Early success on 345 kV line insulators.
- 15 See Reference 106: LAST, F. H. *et al.*, 1966
- 16 STALEWSKI, A. C., and DAWKINS, R. B.: 'Remotely controlled live washing', *Elect. Rev.*, 1967, **180**, pp. 708-711
- 17 NGK INSULATORS LTD.: 'Hot line washing equipment'. Technical Note 70048. Mizuho, Nagoya, Japan, 1970  
Detailed accounts of spray and artificial rain methods.
- 18 KNUCKEY, A.: 'Live line insulator washing', *Middle East Elect.*, March 1987, pp. 20-21  
Fixed ring sprays for overhead lines up to 220 kV, especially in desert areas, using Mather Platt 'plug-in' system with mobile tankers.

This bibliography is based on work by D. C. Levitt, CEGB Information Services, London, England