There are causes to problems other than stray voltage.

Hoard's Dairyman, 199*, By Roger Mellenberger

A. Excessive teat end erosion:
1. vacuum too high or too low
2. malfunctioning pulsators and/or vacuum controller
3. inflations worn or reusing old inflations after washing in caustic solution without proper rinsing
4. pump capacity not sufficient
5. chemical irritation or viral infection (warts, mammillitis, cowpox and others)
6. excessive machine-on time and machine stripping caused by insufficient prep time or prep lag too long
7. frozen teats or stepped-on teats
8. teat cup liners not matched with shell diameter
9. claw and/or pipeline capacity not sufficient
10. wide pulsation ratios (72:28 or 80:20) on fast milking, high-producing cows

B. Uneven milk out
1. mastitis in one or more quarters
2. holes in short air tubes or air hose
3. pulsator malfunction
4. twisted inflations
5. bent ferrule(s)
6. claw manifold partially plugged
7. improperly positioned milking unit
8. teat end injury
9. water trapped between shell and liner
10. substantial hole in short milk tube or split liner

C. Increase in "machine-on" time per cow
1. production substantially increased on herd basis
2. milking techniques not correct (see A. 6)
3. vacuum too low
4. insufficient air flow — pump capacity low, vacuum controller malfunction or air leaks
5. pipeline too small or too many units per slope
6. pulsators malfunctioning or hoses reversed on pulsators when front and rear pulsation ratios differ (50:50 and 60:40)
7. too many milking units per person
8. new milker person
9. overuse of inflations or reuse of old inflations after washing
10. pipeline not sloped or sloped in wrong direction
11. increase in new infections

D. Gradual or dramatic increase in SCC or predictable cyclic changes in SCC
1. air flow shortage due to vacuum pump gradually failing; bearings, belts, vanes or plugged air lines
2. overuse of inflations
3. vacuum controller problem
4. purchase of infected cows or springing heifers
5. hiring of new milker person
6. stopped or changed teat dip or dry cow treatment
7. environmental mastitis related to housing problem
8. malfunction of pulsators
9. use of contaminated teat dip, contaminated antibiotics for intramammary infusion or contaminated wash water

E. Increase in nonresponsive (chronic) clinical mastitis cases
1. pulsator and/or inflation problem
2. vacuum pump failure
3. vacuum too high or too low
4. overuse of contaminated water to wash dirty teats and udders without drying
5. use of contaminated teat dip or change to a non-efficacious teat dip or dry cow treatment
6. pipeline capacity not able to handle major increase in production per cow
7. purchase of infected cows or infected springing heifers
8. use of contaminated drugs or equipment

F. Fewer cows milked per hour at given production
1. parlor and holding area design faulty — entrance and exit
2. equipment malfunction — pulsators, vacuum, vacuum controller and/or inflations
3. people; behavior and habits
4. adequacy of milking techniques
5. increased mastitis incidence
6. poor udder and teat end quality related to sire or nonselection of sire

G. Excessive machine fall off and/or liner slippage
1. inadequate air flow caused by inadequate pump capacity, air leaks, vacuum controller sticking, vacuum line partially obstructed and others
2. worn inflations or faulty inflation design
3. undersized pipeline (flooding) or too many units/slope
4. claw too small for production of cows or air vents (claw or liner) plugged
5. teats excessively wet
6. excessive machine stripping
7. poor udder quality, particularly wide udders or poor teat placement
8. poor claw positioning or excessive claw weight
9. cow behavior — kicking and moving
10. vacuum set too low
11. wide pulsation ratio combined with simultaneous pulsation and small claws

H. Increase in standard plate count or PI count
1. insufficient pump capacity
2. improperly located or undersized air injectors on wash system
3. wash lines not sized properly
4. inadequate supply of hot water
5. cleaning agents not matched with water quality
6. air leaks on wash line or milk pipeline
7. excessive wash temperature drop during cycle
8. bulk tank not cooling adequately or tank not washed properly
9. weigh jars, meters or samplers not washing
10. gaskets on pipeline old and worn
11. wash plug restricts cleaning of receiver
12. major increase in number of cows infected with *Streptococcus agalactiae* (purchased?)

I. Milk rancid, high acid degree value
1. excessive air leaks at receiver, milk pipeline or claw units
2. excessive lifting of milk — weigh jar or high pipeline designs
3. excessive slope on pipeline or several elbows
4. foaming in receiver (milk pump burns foam)
5. inadequate vitamin E and selenium in ration
6. cooler not cooling quickly enough
7. freezing of milk by cooler

J. Fat test consistently lower by .3 to .5 on bulk tank milk, compared to DHI (split samples)
1. cooler not cooling quickly enough
2. cooler freezes first milk in tank before agitaror stirs milk
3. excessive foaming
4. warm milk added to frozen milk

K. Cows become irritable, abusive or uncomfortable at milking or reluctant to enter parlor
1. expected of many fresh 2-year-olds (check sire disposition score)
2. abusive people milking or strangers present
3. limited grain fed in parlor or cows fed different amounts
4. all items covered under "teat end erosion" (A:1 through 10)
5. lice, flies and other parasites
6. overmilking at high vacuum (greater than two minutes)
7. moving into new or different milking facility; cows purchased from stanchion facility and moved to parlor or cows changed from a single-sided parlor (milked on one side) to a double parlor (milked on either side).
8. laminitis, hoof rot, sore feet or feet and leg injuries
9. cow in heat
10. udder or teat abrasion, cut or injury
11. stalls (tie stalls, stanchions or parlor) too short
12. slippery floors, plus small stalls
13. hooves not trimmed
14. parlor entrance has steps, ramps, turns, doors, walls and gates in the way