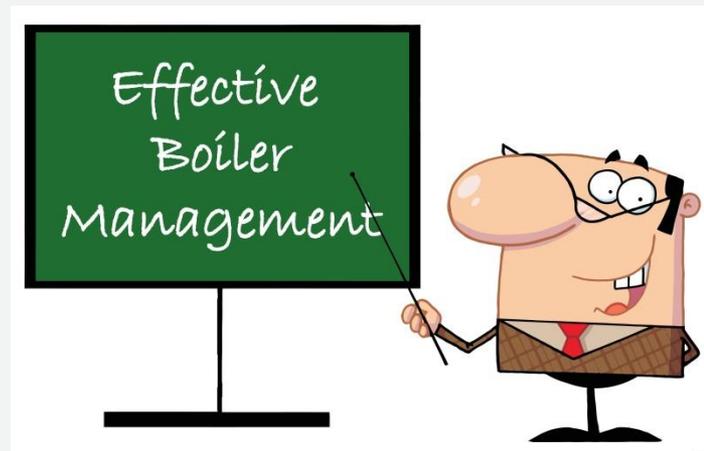


Statistical and Loss based training

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Zurich Service Corp.

Risk Engineering





2000 National Board Incident Report Power Boilers



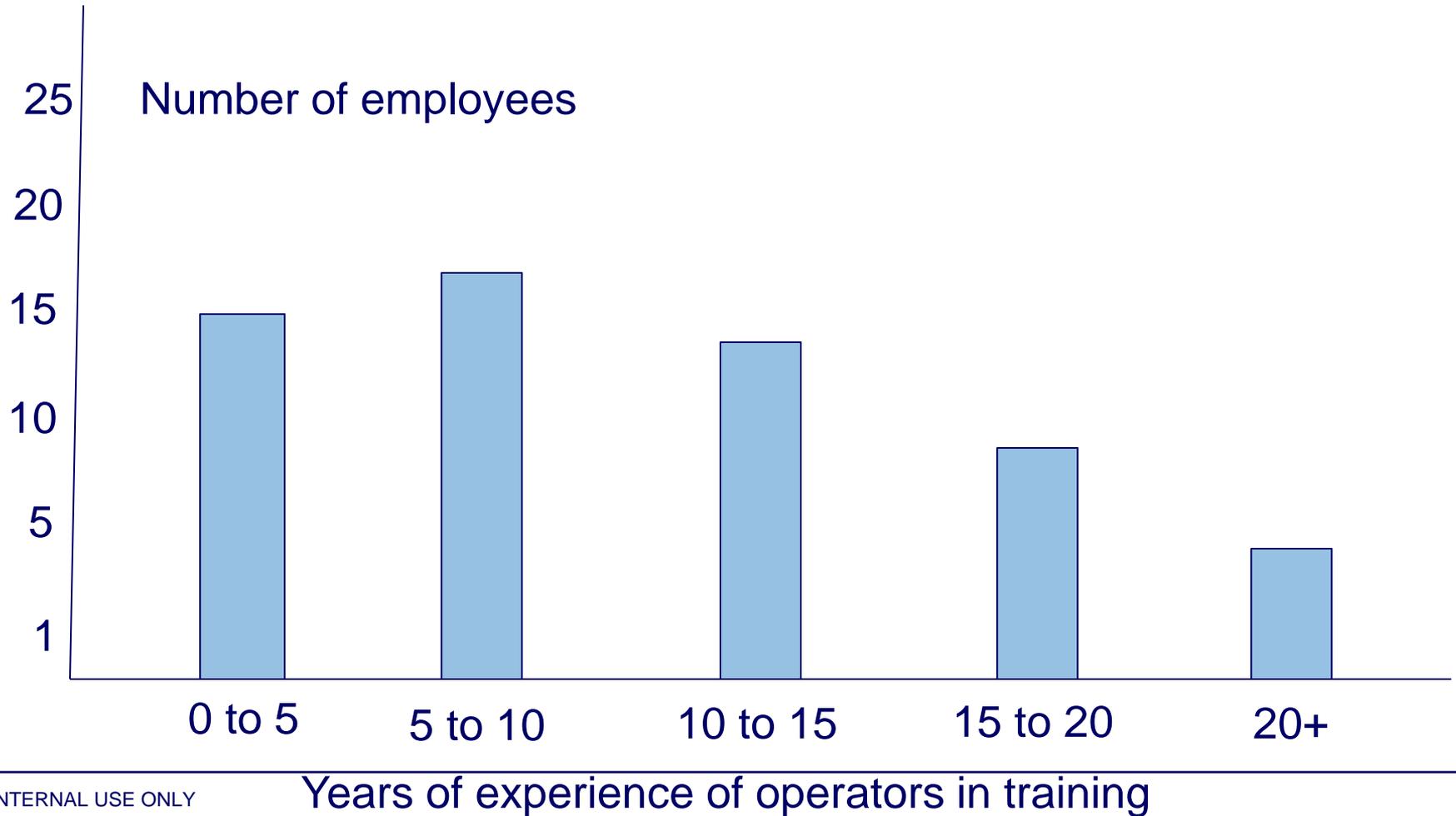
OBJECT EXPERIENCING INCIDENT	ACCIDENTS	INJURIES	DEATHS
Safety valve	1	0	0
Low-water condition	183	7	0
Limit controls	22	1	0
Improper installation	15	0	0
Improper repair	16	0	0
Faulty design or fabrication	8	0	1
Operator error or poor maintenance	193	12	0
Burner Failure	10	0	7
Unknown/under investigation	12	0	0
SUBTOTAL	460	20	8

Conclusions from the incident slide

- 39 percent of all accidents were from low water conditions
- 41 percent were attributed to operator error

These were the numbers we based the training around initially. Thinking that is we properly trained an operator and emphasized the importance of the low water cutout we could reduce their losses over 80 percent.

Typical Demographics of operators in class





The end result

What was surprising was that in the end, the training followed the demographic number from the National Board website almost to the letter.

After 15 years of training and over 4000 operators through the course, some 2 and 3 times.

Losses at their facilities dropped from 7 to 10 boilers and year to one or two, with a few years having zero.

