Traditional Stub Removal

- Slow
- Skill dependent
- Drum damage
  - Repairs
- Safety
Induction Heat Stub Extraction

- Fast
- Skill independent
- No drum damage - no repairs
- Safe, simple, clean
Induction Heating Tube Shrinking

- Insert coil into stub
- Power on
- Heat stub
- Stub expands
- Stub yields
Cooling

- Insert air lance
- Stub shrinks
- Stub loosens
Extraction

• Remove loose stub
Induction Heat-and-Pull

Second method

Developed for over-rolled stubs

Babcock & Wilcox patent
- Stub removed in one piece
- Bell collapses
- 1 ½ minutes
- Drum shell unharmed
Pulled stubs
License

For IHTS for

• All types of boilers & heat exchangers

• extensive use in Japan since 1991

• extensive use in North America since 2005
Advantages

• No damage to seats

• 50% less seat cleaning required

• Cost and Schedule improvements

• Reduced downtime, shorter outages

• Safer job

• Skill independent