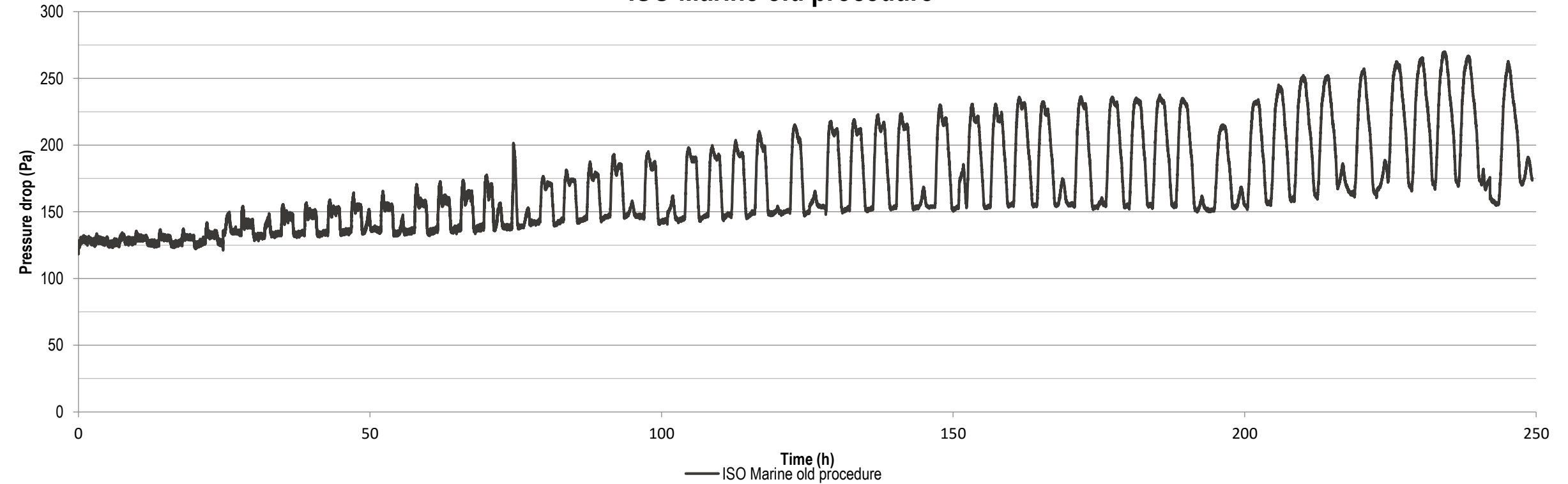


# OLD TEST CYCLE

- Ultrafine dry NaCl is generated continuously throughout the entire test using the Mk. II salt generator.
  - Test starts with water droplet challenge where the filter is sprayed with 0,2 liter/minute (9,6 liter) (4 250 m<sup>3</sup>/h) for 60 minutes.
  - Relative humidity is cycled Hi/Lo in approx. 2h cycles where Hi means >95% r.H and Lo means between 25-40% r.H.
  - Additional relative humidity cycling is done during the night as well.
1. 60 min water spray
  2. 2h low r.H
  3. 2h high r.H
  4. 2h low r.H
  5. 60 min water spray
  6. Continuous high/low cycling throughout the night.

# RESULT

ISO Marine old procedure



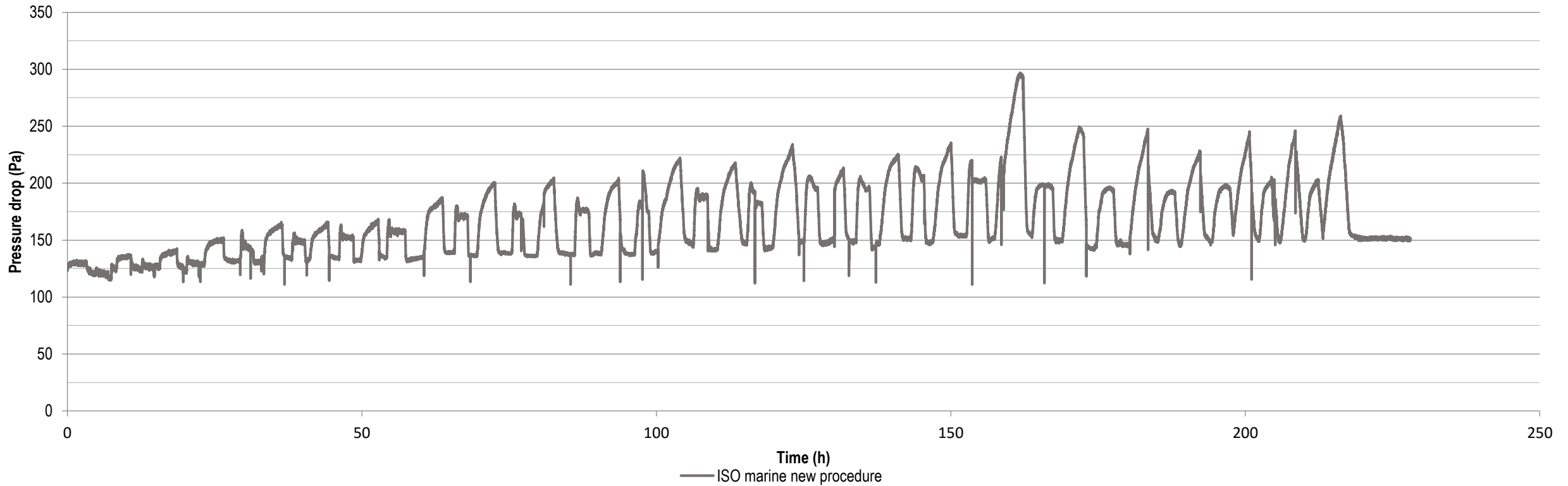
- 22 water spray cycles
- 51 high r.H cycles
- Water breached through the filter at 269Pa

# NEW TEST CYCLE

- Ultrafine dry NaCl(or KCl) is sprayed continuously throughout the entire test.
  - Test starts with water droplet challenge where the filter is sprayed with a fine water mist with a LWC of 1.732g/m<sup>3</sup>. At 4250m<sup>3</sup>/h this is approx. 7.3l/h or 0.12L/min
  - Relative humidity is cycled Hi/Lo in approx. 2h cycles where Hi means >95% r.H and Lo means between 25-40% r.H.
  - Additional relative humidity cycling is done during the night as well.
1. 3h min water spray
  2. Dry cycle
  3. When r.H <40% start 1h low r.H.
  4. 2h high r.H
  5. Dry cycle
  6. When r.H <40% start 1h low r.H.
  7. Repeat 1-7 until leakage

# RESULT

## ISO Marine new procedure



- 24 water spray cycles
- 23 high r.H cycles
- Water breached through the filter at 259Pa

# CONCLUSIONS

- Lab technician liked the old timing better, said that there was easier to maintain good timing. When the testrig is automated i expect there to be no difference for the operator.
- Both filters started to leak at roughly the same dP (259Pa vs. 269Pa).
- Similar runtimes for both new and old timing cycles (250h old vs 217h new).
- Filters behaved the same when they started to leak, leakage occurred over the entire filter area at the same time, not just in one spot.
- Camfil will run more trials on timings and increased salt load.