Optical Fouling Monitors
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Workshop on Monitoring Systems
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Nalco Optical Monitors

• Five Patents:
  – Disk Monitors
    • Reflectance (US 5,264,917)
    • Transmittance (US 5,155,555) Paper
  – Wiper Monitor (US 5,185,533) Cooling Water
  – Falling Stream (US 6,023,070)
  – Living Deposits Detection (US 5,796,478)

• One Standardized, One in Development
Disk OFM in Read Position

LED

Detector

Target Areas

Test Disk

Source/Detector

Liquid Level

Rotation Axis

Rotation
Disk OFM Application Example

Days from Beginning of OFM Run

OFM

Before Transition
First Treatment Protocol
Second Treatment Protocol
Falling Stream OFM

Light source & Detector Control
(4-20 mA output)
Nalco Falling Stream Monitor Results

Elapsed Days from Start of Fouling Run

OFM or ORP mV or Added Product (ppm Active)

Residual Oxidant as Cl₂ (Total by DPD)

- OFM
- Product Added
- ORP
- Tot Cl₂ DPD
Wiper OFM

Automatically Wiped Clean

Surface Deposit Accumulates

Detect & Process & Store

Control

External Modem

Alarm / Product Feed

Remote Site