

Preparedness for secure water supply and wastewater management - Country status: Norwegian water sector



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The water sector do develop and adapt



Oslo water services in 1874



- Technological development
- Change in focus and tasks
 - Communication
 - Security

A dilemma for the water sector in Norway



Public owned by the municipalities by law

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|--|--|
| <ul style="list-style-type: none">• Transparency• Open access to information in the public sector• The public want to see the infrastructure, in particular the treatment plants• Political controlled | <ul style="list-style-type: none">• Security• Limited access to information• Limited access to certain sites• Controlled by agencies appointed by ministries (or municipalities) |
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A certain change is observed



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Looking 10 years back



- A new water treatment plant in Oslo was set in operation
- Information of the plant was distributed freely
- "Everyone" was allowed to visit the plant; the limit was the capacity for the guides
- The Danish contractor had an open line to the control system and fixed bugs and installed new versions from Denmark

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Aftenposten, 2013



- Secret report criticise the security for drinking water in Oslo
- Access to surveillance and control system is possible with the password 0000





Today

- Vital information of the plant is restricted
- No access to the plant except for personnel with a designated task
- “Stand-alone” control system

but

- When we invest billions NOK in new infrastructure, “no-one” will notice anything but the costs and the disturbances during construction

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Laws and directives

- The Norwegian Directorate for Civil Protection (2016): «Access to fresh water is a fundamental prerequisite for maintaining life and is important with regard to hygiene and sanitation»
- The Ministry of health and The Norwegian Directorate for Civil Protection has identified waterworks as critical infrastructure but consider sanitation as well
- Revised Drinking water directive (2017-01-01): «...requires that water treatment plants and distribution system to have sufficient physical security measures» and «the waterworks shall supply the customers with **drinking water at all times**»
- The Ministry of health and the Norwegian Food Safety Authority shall ensure that the security is «sufficient». The latter and the National security authority will perform inspections according to the Drinking water directive and Law of security (2016)



Securing water supply

- An open guideline prepared by Norwegian water
 - Protection against what? (terror, sabotage, intelligence, theft,...)
 - Which objects should and can be secured?
 - Physical protection
 - Protect information
 - Establish a culture for security
- How (and if) the waterworks secure their installations are likely to be restricted information

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A typical outer physical barrier



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Bodø 2018

- Three persons broke in to a waterwork serving 40,000.
- No-one could tell if the water was contaminated before analysis was performed
- It turned out to be «ordinary» burglars, but...

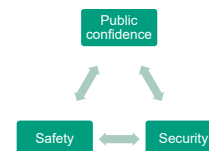


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Challenges for security

- How to handle conflicts between requirements for transparency and security?
- How to handle conflicts between requirements for security and safety?



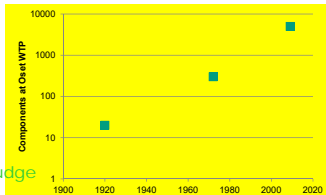
- How to secure the manholes (34,000 in Oslo only)?

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Challenges for security and safety



- Modern drinking water and wastewater treatment plants are compact and more efficient than the older, but depend on a huge number of components to work, not to mention the control system



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Conclusions for the water sector



- We are improving the security, but have still a long way to go
- Until now the main focus has been on water supply, but focus on sanitation is likely to come
- The progress in securing the water supply infrastructure shows certain variations between the waterworks

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