



ESDU SPG-M3-3

Impacts of fouling in oil refineries, standard design methods, proposed approach

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CROF Sub-Project G:

Control and Mitigation of Fouling in Heat Exchangers of Crude Distillation Units

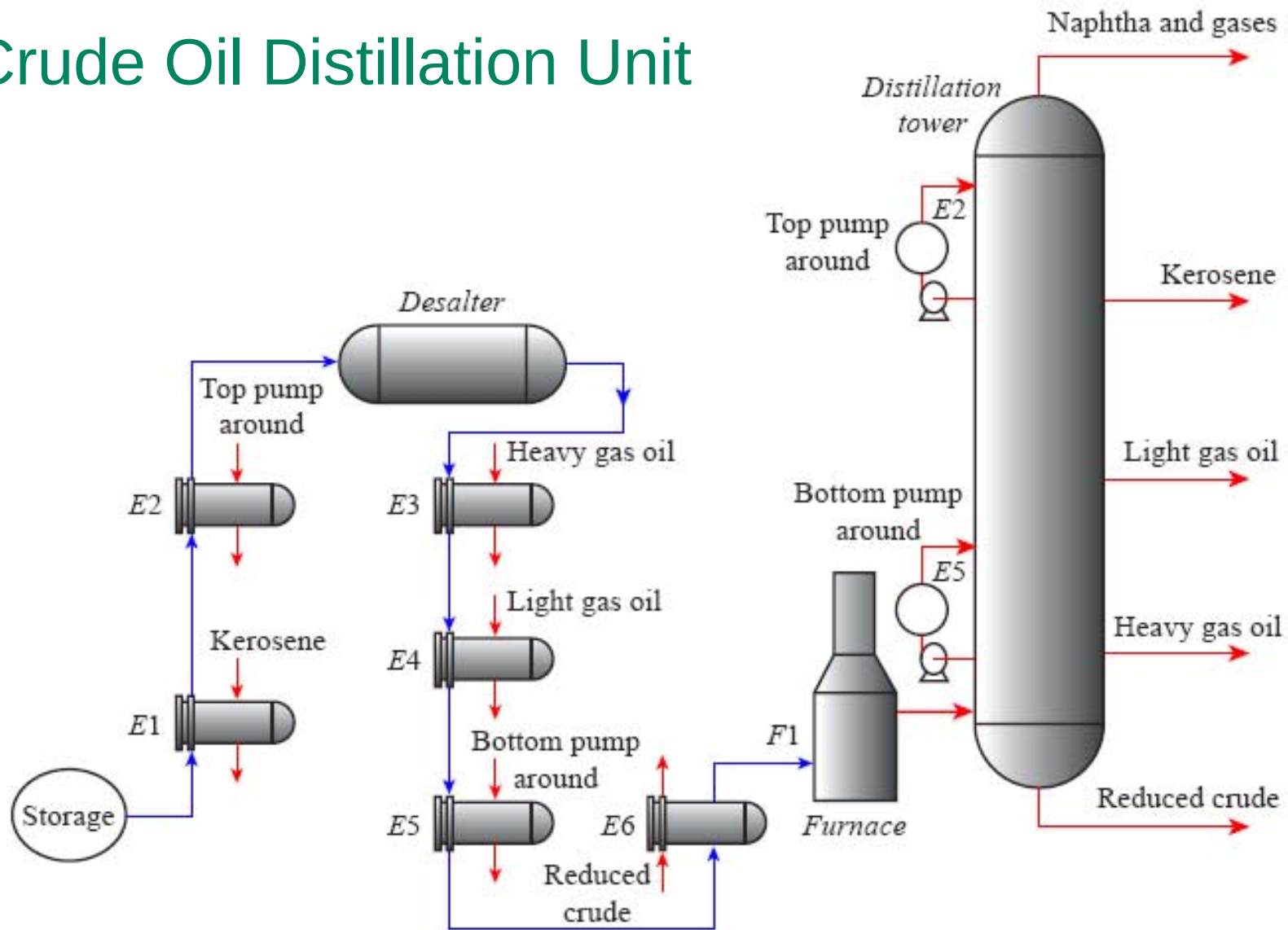
- Impacts of fouling in oil refineries
- Standard design methods
- Proposed approach

Presented by: **Francesco Coletti**, Supervisor: **Sandro Macchietto**
Collaborating academic: **Stephen M. Richardson**



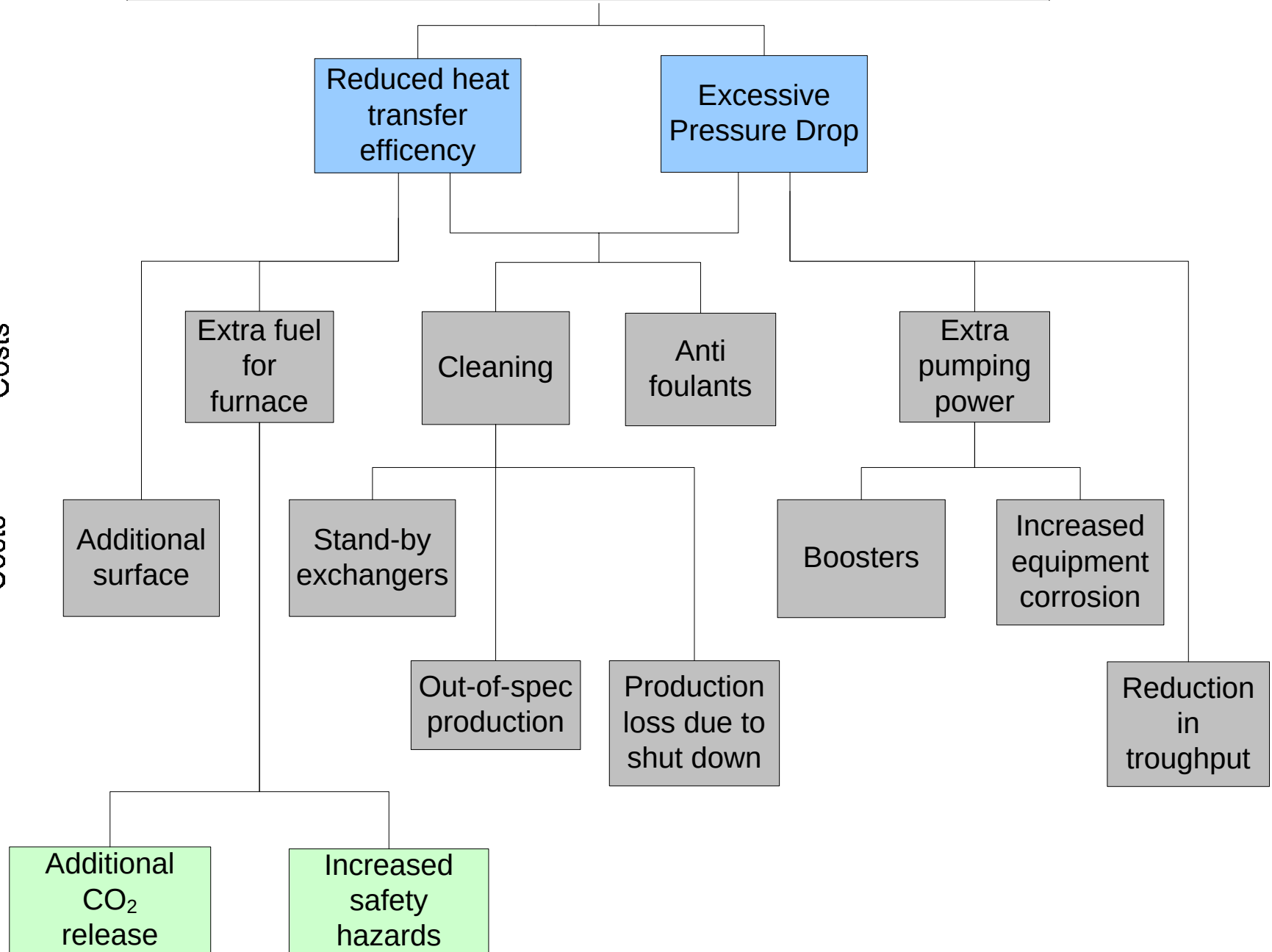
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Crude Oil Distillation Unit

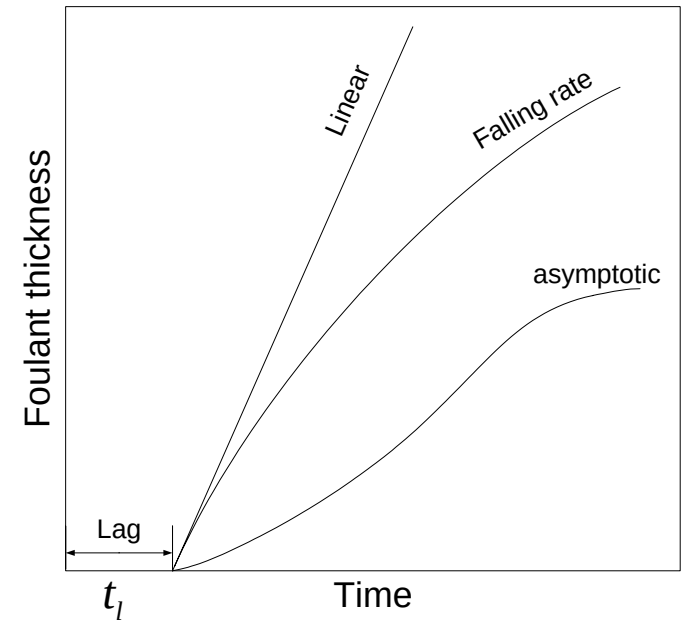
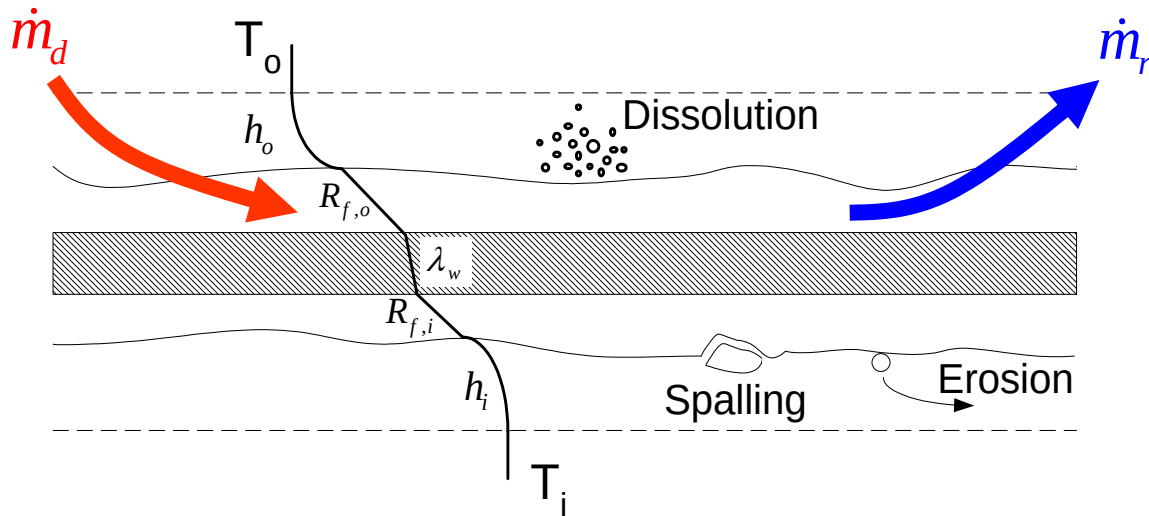


ESDU, 2000. Heat exchanger fouling in the pre-heat train of a crude oil distillation unit. *Data Item 00016*.

Impacts of fouling in PHT of CDU



Fouling on thermal surfaces



$$\frac{dR_f}{dt} = \alpha Re^\beta \exp\left(\frac{-E}{RT_f}\right) - \dot{m}_r \tau$$

(Ebert and Panchal, 1995)