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## Operational Support of Power Facilities Department Integrity and Technical Engineering Division



# BOAT SAMPLES EXTRACTION

Equipment for extraction of boat samples from steel wall mounted on the hydrocrack unit

### Value for customers

- The method allows extraction of small quantity of the material from the operational equipment for further evaluation.
- Extraction does not damage an equipment. Extracted sample has a shape of lentil having diameter about 2 cm (0.75") and height about 3 mm (0.1")
- Welding repair is usually not needed
- Sampling can be carried out without cooling liquid to prevent contamination
- It is possible to sample material from both the base metal and the welds

### Application

- Data allow to assess condition of equipment, for example the residual lifetime evaluation
- The method can be used for the failure analysis for various systems, structures or components in nuclear and classic energetic systems and in other industries

### What we offer

- On-site sampling of the material from the component

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- Analysis of the extracted material using light optical microscopy, scanning electron microscopy, microhardness measurement, chemical microanalysis and other analytical tools
- Follow-up mechanical tests using test specimens made from boat sample material (small-punch testing)
- QA system according to ČSN EN ISO/IEC 17025 and ISO 9001

#### Our references

- Dukovany and Temelin NPPs, Czech Republic
- Coal-fired power plants, Czech Republic
- Chemical industry, Unipetrol, Czech Republic
- Oil pipelines, MERO, Czech Republic



Typical appearance of equipment surface after boat sample extraction