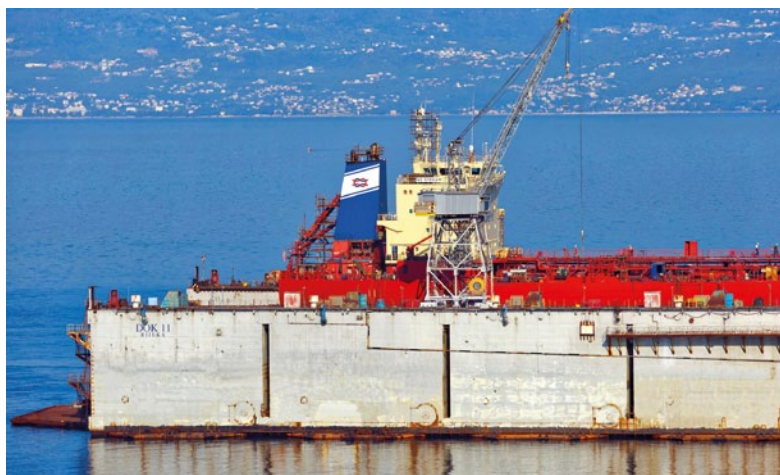




BALLAST WATER TREATMENT SYSTEMS RETROFIT PROJECTS AT VIKTOR LENAC



Viktor Lenac Shipyard performed its first BWTS retrofit installation in 2015 on the vessel *Cable Enterprise*, during its conversion from a cable laying barge into a DP2 cable laying barge, when Pan-Asia's BWTS solution was successfully retrofitted onboard. In 2016, a world's renowned SCF Group awarded us with 3 of their MR product tankers - *NS Stream*, *NS Power*, and *Tavrishesky Bridge* – for retrofitting of Ecochlor's BWTS solution. In 2017, SCF Group awarded us with 2 more of their vessels, MR product tankers – *SCF Amur* and *SCF Pechora*. All delivered projects were accomplished within the budget, on time and in accordance with the highest shipping standards. The expertise gained in these projects places Viktor Lenac Shipyard in a narrow circle of the world's top shipyards able to deliver complex BWTS retrofit projects with a top quality, in a safe way and on time. Recognizing our top performance, Wärtsilä signed a BWTS cooperation agreement with us in 2017.

OUR ADVANTAGES

- Proven BWTS retrofit track record
- Hands-on experience
- Dedicated project management team
- Skilled and experienced workforce
- Procurement and prefabrication services
- Docking and berthing facilities
- BWTS retrofits in parallel with scheduled maintenance
- All mayor class societies offices located in the Shipyard
- Warehouse for safe keeping of BWTS equipment before installation

DELIVERED PROJECTS

2015 - *Cable Enterprise* / Pan-Asia's BWTS

2016 - *NS Stream*; *NS Power* / Ecochlor's BWTS

2017 - *Tavrishesky Bridge*; *SCF Amur*; *SCF Pechora* / Ecochlor's BWTS



Ballast Water Treatment System installations are not straightforward as it may seem and even sister ships can differ quite enough to demand a very different approach. Understanding the complexity, preparing diligently and being flexible enough to address technical challenges as they arise are the keys to success.

BWTS RETROFIT PROJECTS



1. BIDDING PHASE

- Detailed review of technical specification and drawings provided by the shipowner
- Reporting inconsistencies or errors noticed with regard to the Bill of Materials and Scope of Work
- Providing detailed cost structure

2. PREFABRICATION PHASE

- Manufacturing of steel elements and pipes (black steel, CuNiFe, SS, Alloy20, GRE/GRP), including anti-corrosive treatment
- Manufacturing and pre-assembly of deck-houses and outfitting

3. BWTS INSTALLATION ONBOARD THE VESSEL

- Fitting of pipes, electrical cables and steel works (foundation and deck-houses)
- Design/redesign in situ together with the shipowner/class society
- Procurement of any additional materials required
- Installation of BWTS equipment delivered by the shipowner

4. COMMISSIONING

- Full assistance during the BWTS commissioning phase



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