

FACT SHEET

November 2013

Pre-Commissioning of the Nord Stream Pipeline

After installation, a series of activities prepared the Nord Stream Pipeline for commercial operations. For Line 1, the pre-commissioning activities have been completed between April and September 2011. Pre-commissioning activities for Line 2 started in spring 2012 and have been completed in September 2012.

Pre-Commissioning Procedure

1. Flooding, Cleaning and Gauging

- The pipeline was cleaned by flooding its interior with sea water; the cleaning pigs (pipeline inspection gauges) used to introduce the water carried thin aluminium plates for gauging, i.e. to check the pipeline's roundness and dimensions.



Picture: Generic flooding train

- Flooding, cleaning and gauging was performed from a vessel for each of the three pipeline sections (Section 1 and 2 at KP 297, Section 3 at KP 675).

2. Pressure Test

- Subjecting the pipeline to a test pressure higher than the operating pressure shows that it can withstand the operating pressure without any losses.
- The three sections were tested one after another. Pressurisation was performed from a vessel at KP 297 and the German landfall.
- To prevent corrosion of the pipeline interior, the seawater used was treated with the oxygen scavenger sodium bisulphate (NaHSO_3). Also, micro filtration and UV treatment was used.
- Sodium bisulphite is not considered harmful to the environment¹ and is commonly used as food additive (E-222) in wine, leafy green vegetables and canned fruits at comparable concentrations in order to prevent oxidation. Microfiltration and UV treatment are both used in potable water treatment.
- After the pressure test, the three pipeline sections have been connected by so-called hyperbaric tie-ins.

3. Dewatering

- For dewatering, a temporary air compressor station was used to propel the dewatering pig train from the German to the Russian landfall at a speed of about 0.5 metres per second.

¹ According to OSPAR (Convention for the protection of the Marine Environment in the North-East Atlantic) it poses "little or no risk for the environment".

- The water was discharged into the sea at Portovaya Bay via a 20 inch pipe running off shore, to a distance of about 500 m from the beach.
- Dewatering of Line 1 took place in August 2011. Detailed surveys of water samples have shown that this had no or only a minor short-term impact on Portovaya Bay.

4. Drying and Inerting with Nitrogen

- After the pressure test, the pipeline was dried and subsequently filled with inert nitrogen gas (N₂) from the German landfall.
- Once nitrogen with original quality has been received at the Russian landfall, the pipeline was ready for gas-in. The first gas was introduced from the Russian landfall, and drove the nitrogen back to Germany.

Suppliers

BJ Services, a leading provider of pipeline services worldwide, has been subcontracted by Saipem for the pre-commissioning operations.

More information at www.nord-stream.com

For further information, please contact:

Nord Stream Press Hotline: +41 41 766 91 90

E-Mail: press@nord-stream.com