Ansys + EVNAT

"Through the Ansys Startup Program, EVNAT leverages Ansys tools to revolutionize fluid storage. EVNAT set a goal to create a highly efficient and reliable mixing device to eliminate sediment formation and product separation in various capacity tanks. Ansys tools helped us reduce development time from two to three years to just one to two months."

Ekaterina Tuzovskaya
General Director / EVNAT LLC

EVNAT Revolutionizes Fluid Storage with the Use of Ansys Tools

High tech products and technological progress change our lives for the better. Digital technologies have already revolutionized communications and they are now revolutionizing the industrial sector.

Leveraging the Ansys Startup Program's Structural and Fluids Bundle, EVNAT created an innovative jet mixing device for tanks, delivering a revolutionary solution for storing liquid media in large volumes.

/ Challenges

Tanks may have different volumes and designs with various structural elements inside them (pontoons, pipelines, etc.) and may store liquids of different densities. We found it was impossible to calculate a mixing device's operation within a short period of time, taking into account various factors. However, using engineering modeling, we determined the efficiency of a mixing device's particular design, adjusted the device's parameters, factored in the specifications of each tank and conducted processing.

/ Technology Used

- Ansys SpaceClaim, Ansys Meshing, Ansys ICEM CFD, Ansys CFX, Ansys Fluent, Ansys DesignModeler and Ansys DesignXplorer.

/ Engineering Solution

Ansys tools were used in the following steps:

- Ansys SpaceClaim and Ansys DesignModeler helped construct the tanks' geometry and available equipment within them
- Ansys Meshing and Ansys ICEM CFD performed standard finite element meshing
- Ansys CFX and Ansys Fluent helped form the computational domain, set boundary conditions, conducted product stratification in the tanks, calculated and refined the stucture of the product flows in the UPS and the tanks and assessed the dynamic impact of flows in the tanks' structures
- Ansys DesignXplorer conducted design optimization

/ Benefits

The software obtained through the Ansys Startup Program played a key role in the creation of EVNAT products. Specifically, Ansys software helped us reduce new product development time from two to three years to just one to two months. Also, the products were priced and packaged in a way that made it accessible to a new company.

/ Company Description

EVNAT develops and introduces innovative equipment. The company cooperates with large industrial enterprises, such as the fat and oil industries. We have a representative office in the European Union. The company's activities are supported by public organizations, including the Russian Export Center, the Chamber of Commerce and Industry of the Russian Federation. We participate in international conferences and business forums. Additionally, EVNAT holds four Russian and three Eurasian patents.
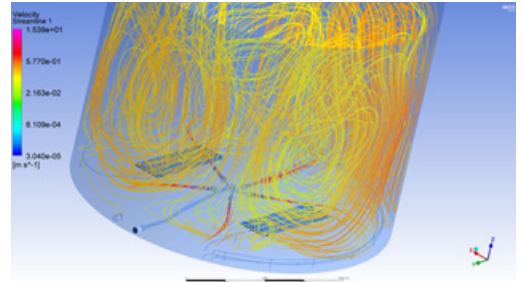
Visualization of streams created by a mixing jet device
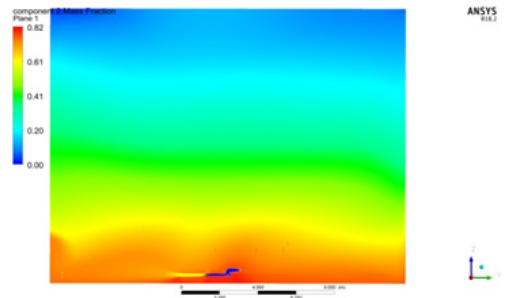
Sludge concentration over the height of the tank.
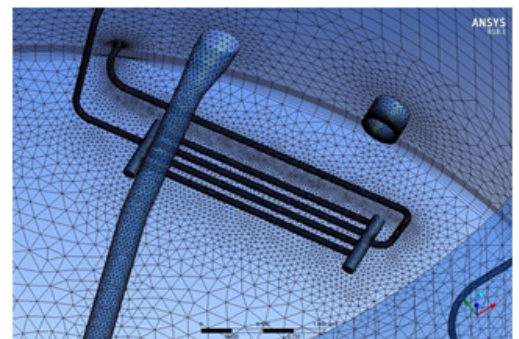
Finite element mesh of the tank with equipment in it.

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