

This Engineer Has More Than Pipe Dreams

Marjorie Valdez graduated cum laude in spring with a degree in mechanical engineering and is spending the summer as an intern working on the Trans-Alaska Pipeline System (TAPS).

By Janet Gillis, College of Engineering

Native Alaskan, Marjorie Valdez, loves her beautiful home state, but she sometimes felt disconnected from the rest of the United States. With the encouragement of her family, she traveled nearly 5,000 miles to attend the University of South Florida.

Coming from the fourth *least* populous state to Florida the fourth *most* populous state was not a big culture shock for her. "Anchorage is a city of 300,000, so I didn't experience any culture shock, but the climate change took a bit of time to get used to," Marjorie said.

As an engineering intern working for Alyeska Pipeline Service Company, the private company that operates and maintains the TAPS, she is assigned to the Project Engineering Department which oversees major projects on the pipeline ranging from maintenance to new equipment installations. The pipeline is 800 miles in length and spans the state from Prudhoe Bay on the North Slope to the southern Alaskan town of Valdez. Approximately 500,000 barrels of crude oil is transported through the pipeline per day and is loaded onto tankers in the port of Valdez where it is sent to market.

With the weather favorable for labor and construction on the pipeline, Marjorie is shadowing a project engineer this summer on pipeline maintenance. One of her first assignments involved a project that will replace the batteries that operate the 62 remote gate valves used to close off oil flow in certain sections of the pipeline in case of emergency. She filled out equipment request forms to assign tag numbers to the batteries which are now as old as the pipeline itself (36 years).

She is currently working with a facility engineer on a minor project that will remove the wooden supports beneath three 10,000-gallon diesel fuel tanks and replace them with concrete supports at Pump Station 4 in a remote location in central Alaska.

"My work involves discussing issues with design engineers in order to choose an appropriate situation. Not only am I able to experience the process of this small project first-hand but I also sign off on important engineering documents, she said."

So far, Marjorie has traveled to five of the twelve pipeline pump stations by car and even helicopter.

Growing up, she didn't have a dream job in mind, but her high school physics teacher helped to combine her love of math and science and funnel that into an interest in engineering.

"I veered towards mechanical (engineering) because that's what seemed to interest me most – how mechanisms work, and trying to solve the puzzle when something doesn't work," she added.

Marjorie's mom, an Alyeska employee since 2007, has been her greatest influence and she admires her mother's accomplishments such as earning both a bachelor's and master's degree while working and

raising three kids. “My mom has always supported me. She’s always encouraged me to be a free-thinker and make my own decisions,” Marjorie said.

She advises students to get involved with an internship as early as their sophomore year. “The experience and knowledge from an internship is one you won’t be able to get in a classroom and will only make you that much more prepared and qualified for a job once you graduate.”

While at USF, Marjorie was a member of Tau Beta Pi, the engineering honor society, and her fondest memory is bonding with fellow engineering students over late night study sessions in the library before exams.

She’s not sure what the future holds for her career-wise, but studying for the professional engineer exam is high on that list as well as graduate school.

“I would like to start my career by finding a technical position so I can gain more engineering experience, Marjorie said.”