

Posted January 2, 2018 10:11 pm

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Peninsula Clarion

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## CIRCAC studying pipeline leaks



In April 2017 Hilcorp's Bruce Platform, pictured here, was shut in along with its neighboring platform Anna after the later released a sheen from its flaring system that turned out to be roughly three gallons of natural gas condensate. The incident was one of the 2017 hydrocarbon leaks from Cook Inlet's aging platforms and pipelines that prompted the Cook Inlet Regional Citizens Advisory Council to begin an overview of Cook Inlet oil and gas infrastructure, leading to recommendations for preventing future leaks. (Photo courtesy of Ground Truth Trekking.)

After 2017 began with a natural gas leak in Cook Inlet, local spill prevention experts are preparing a comprehensive look at Cook Inlet's aging oil and natural gas pipeline infrastructure. The Cook Inlet Regional Citizen's Advisory Council (CIRCAC) is now wrapping up a pair of reports surveying regional pipelines and the state and federal authorities that oversee them, and is planning to follow with a historical record of leaks and responses, leading ultimately to a set of

recommendations from industry and government experts about how to reduce the risk of future leaks.

Researcher Tim Robertson of Seldovia-based environmental consultancy Nuka Research and Planning Group, whom CIRCAC commissioned to carry out the initial studies, described the Cook Inlet Pipeline Infrastructure Assessment as “a win-win sort of thing.”

“Everyone has the same goal making sure the infrastructure is in good shape and continues operating to the future and there’s no environmental damage from it, and it helps the economy,” Robertson said. “...There’s been great support from the industry and from the agencies both. It does not seem to be controversial, at least so far.”

According to [preliminary research that Nuka presented to CIRCAC in September](#), structural or mechanical failures caused 80 percent of the 88 spills in Cook Inlet since 2001. One prominent example began in late 2016 or early 2017, when friction against a sharp rock on the Cook Inlet seafloor created a leak in a 50-year-old underwater pipeline that carries natural gas fuel to Hilcorp’s four Middle Ground Shoal platforms, about 5 miles northwest of Nikiski.

When [Hilcorp reported the leak to the Alaska Department of Environmental Conservation in February](#), it was releasing 210,000 and 310,000 cubic feet per day of methane — a gas with an atmospheric warming effect up to 35 times greater than carbon dioxide, [according to the U.S. Environmental Protection Agency](#). Ice cover on the inlet prevented the leak from being repaired for three months. The pipeline had leaked on at least two previous occasions from similar causes.

The Middle Ground Shoal platforms are among the oldest in Cook Inlet — Shell installed Platform A, the leaking pipe’s destination, in 1964. According to CIRCAC’s website, 14 of Cook Inlet’s 16 platforms were installed between 1964 and 1968.

At least two other pipeline and platform hydrocarbon leaks followed in 2017 — on [April 1 Hilcorp shut down its Anna Platform](#) after its flaring system released a sheen which turned out to be about three gallons of natural gas condensate. In August, [a burst hose on Hilcorp’s Steelhead Platform released two hundred gallons of oil-based drilling fluid](#), which was contained in the platform.

Soon after Hilcorp-contracted divers repaired the Middle Ground Shoal leak in April, [CIRCAC got permission from the Kenai Peninsula Borough Assembly](#) to use \$15,494 left over from a previous borough grant to study Cook Inlet’s pipelines.

CIRCAC is a group of thirteen voting members representing local governments and interests groups including tourism, recreation, commercial fishing, aquaculture, and Alaska Natives. It was created by U.S congressional legislation after the 1989 Exxon Valdez oil spill, with the mission of making recommendations to prevent and respond to future spills.

Robertson said the pipeline assessment project has three phases: first, a regulatory overview of the state and federal agencies that oversee pipeline safety and an inventory of Cook Inlet's pipelines, then a historical analysis of their leaks, and finally a set of prevention recommendations.

The inventory — which Robertson said “is essentially maps, and an associated spreadsheet” — will include the names and locations of pipelines, the material and volumes they carry, their record of leaks, and how the leaks were detected. Robertson said Nuka is nearly finished compiling the inventory, and afterward will present it to Cook Inlet's pipeline operators for fact-checking.

“Indications are that they're willing to cooperate and do that,” Robertson said. The inventory will be public after the validation, though Robertson didn't know how long that may be.

The regulatory overview is likewise by being fact-checked by government regulators, including the Alaska Department of Environmental Conservation and the federal Pipeline and Hazardous Materials Safety Administration, and will later become public on CIRCAC's website.

The next report — phase two of the Pipeline Infrastructure Assessment — will be a historical record of pipeline spills in Cook Inlet, compiled from Alaska Department of Environmental Conservation records, which Robertson said are “very rough.”

“We know that there were 88 spills associated with this infrastructure from 2000 forward, but it's very difficult from that database to tell what actually leaked, and why it leaked,” Robertson said. “So we'll be doing in-depth investigation into all the loss-of-integrity events we can find. And we'll be going through (Alaska Department of Environmental Conservation)'s actual filing system instead of their database, and pulling out their case files and studying those, then engaging with the operators.”

That study will allow CIRCAC to look at the variables of pipeline systems: types of corrosion protection and leak detection, steel type and thickness, locations and causes of leaks, responses to leaks, and “general overall changes in policy, equipment, and procedure that resulted,” Robertson said.

By analyzing this information, Robertson said he hopes to get some idea of best pipeline management practices, and whether they are being followed in Cook Inlet. Those ideas will be refined in the project's third phase, when Robertson plans to present the compiled information to a panel of experts — specialists in corrosion, pipeline operation, construction, and leak detection — who he said will be given “an opportunity to engage with operators, the public, and then they will deliberate and come up with a set of recommendations for risk reduction measures going forward, to hopefully make sure the infrastructure is safe and useful into the future.”

Nuka plans to have the recommendations developed sometime in 2018 or 2019, according to the November presentation to CIRCAC. This phase of the project is currently unfunded. The historical study of leaks is also unfunded, though in August 2017 CIRCAC applied for a grant from the federal Pipeline Hazardous Materials Safety Commission.

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