Energia Cura proposing 10-inch main line

High-pressure line would run from Prudhoe Bay to Fox; high-pressure coiled tubing lines would connect to major load centers

Kristen Nelson

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Energia Cura, on behalf of Fairbanks Pipeline Co., began a nonbinding open season Aug. 26 to determine interest in a small-bore natural gas pipeline from the North Slope to Interior Alaska (see story in Sept. 5 issue of Petroleum News).

The company said its hydraulic simulations are based on a 443-mile 10-inch high-pressure line beginning near Pump Station 1 on the North Slope and ending in Fox, with an annual delivery of 12 billion cubic feet, less out-takes at connection points.

In its open season package Energia Cura noted a lack of distribution feeders to Interior Alaska's major load centers, indicated on a map as Fairbanks, Golden Valley Electric Association, Eielson Air Force Base, the North Pole refinery and Fort Wainwright.

The local natural gas utility, Fairbanks Natural Gas, delivers less than 1 bcf a year of re-gasified liquefied natural gas to residential and commercial customers using a 60-mile, low-pressure, plastic-pipe network.

Energia Cura said the Fairbanks Natural Gas system is capable of servicing residential and commercial loads, but "does not reach, nor can it handle the delivery volumes and pressures required to serve the Interior's major load centers."

The company plans to install high-pressure, coiled tubing feeder lines from its primary segments to service the Interior's industrial load centers, which could include points north of the Fox terminus, "depending on the best routes selected to connect the Interior's most significant load centers."

$500 million

Energia Cura partner Alex Gajdos said in a Sept. 8 release that the cost of the 10-inch line is estimated at $500 million and is projected to save Interior communities and businesses at least $1.72 billion in energy costs (electric, fuel oil and natural gas purchases) over 20 years.

The secondary transmission network of 5-inch high-pressure coiled tubing flowlines would have "moderate and discrete costs of service" based on the short distances needed to connect the Interior's major load centers and FNG to the primary transmission segment.

Energia Cura said hydraulic and economic simulations project a price for transportation plus gas will be less

than $10 per thousand cubic feet at the Fox terminus, based on 12 bcf per year, half of what is now paid by major load centers in the Interior and less than half of the $24 per thousand cubic feet residential rate for Fairbanks Natural Gas' LNG-sourced gas.

The base case for Fairbanks Pipeline Co. was completed after Energia Cura conducted a power evaluation study for a new gold mine proposed in Livengood, a mine with a prospective load of 2.8 bcf per year.

If volumes greater than 12 bcf a year were nominated in the nonbinding open season, the throughput cost would be lower; smaller quantities would result in a higher throughput cost.

Gas conditioning

Asked about gas conditioning, Gajdos told Petroleum News in an e-mail that one option would be to treat gas on the North Slope, return the 12 percent carbon dioxide content of the gas for sequestration and install compression.

Or, raw gas could be moved using existing 4,000 pounds per-square-inch discharge pressure, which would require no compression to be built.

He said that less than 10 percent of the targeted load centers require specification grade gas. Other uses — gas turbines, large furnaces and boilers, etc. — could use raw gas effectively, reducing the size of the gas treatment facility and allowing its construction near the terminus at Fox, avoiding North Slope construction costs.

The downside is that 12 percent of transmission capacity would be lost because CO2 would come down the line, and the ability to sequester that gas on the North Slope would be lost.

A treatment facility near Fox to treat only the 1 bcf per year used by Fairbanks Natural Gas for residential and commercial customers would mean that the 12 percent CO2 content of the gas would be released into the atmosphere, Gajdos said, either at the treatment plant or at the point of combustion for untreated gas, still "a vast improvement over the Interior's current rate of emissions resulting from its fixation on coal and distillates."

The 12 percent loss of capacity would also result in "significant impacts to our final cost of service."

Since volumes are small compared to the proposed interstate lines and the bullet line, smaller, more cost-effective, modular gas treatment equipment could be used than would be possible for the high-volume projects.

While treating gas on the North Slope would cost more, neither option is a deal buster, Gajdos said.

Because of the cost involved in evaluating the two treatment options fully they will not be evaluated until the conclusion of the nonbinding open season, but Gajdos said the evaluation of those costs "is highly prioritized and properly sequenced into our forthcoming and final hydraulic/economic simulations."