Surface Water Tracker System Kangerlussuaq Bridge, Greenland

Overview

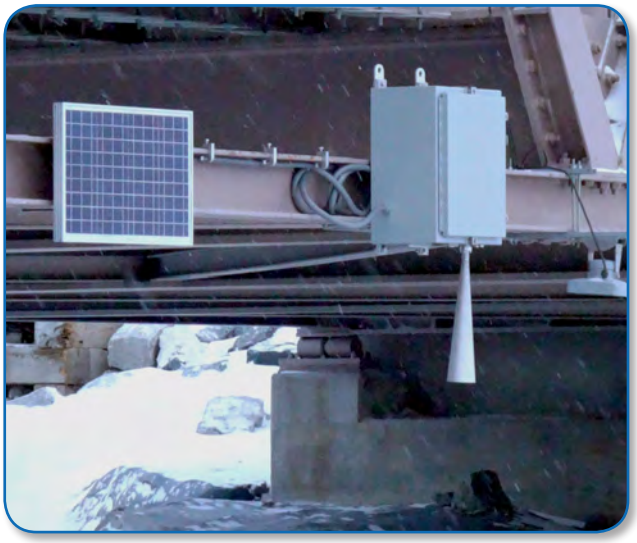
In July 2012 surface melting across nearly all of the Greenland Ice Sheet made news and caused severe flooding in Kangerlussuaq, home to the busiest commercial airport in Greenland. Two channels of the Watson River, flowing through town and under the Kangerlussuaq Bridge, merged into a single body of water then intensified into a massive flood that wiped out the bridge entirely. (See photo. That's a Front Loader being swept off the bridge and down river.)

In February of 2015 Sutron Corporation delivered a station in order to provide the USACE CRREL* with a means to remotely monitor the water level under the Kangerlussuaq Bridge in Greenland.

Since the station was going to be installed in a cold climate where the water is frequently frozen, the best solution was to use an out-of-water radar sensor to measure water level.

All of the equipment for this station was mounted on the Kangerlussuaq Bridge. In order to minimize the amount of installation work needed on-site, Sutron provided a solution where the radar sensor was mounted inside the NEMA IV Enclosure.

Sutron also provided an AT/RH sensor to monitor air temperature and relative humidity. The CRREL plans to add a camera to this station in the future, taking advantage of the 9210's support of serial communications.



The station will take 15 minute measurements for water level, air temperature, and relative humidity. Once an hour this data will be transmitted via the Iridium Satellite network to the SutronWIN database. With custom log-in information, approved end users can view all data in table and graph formats as well as download the data.

PROJECT NAME	Surface Water Elevation Tracker System Installed on Kangerlussuaq Bridge, Greenland
CLIENT	U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory (CRREL)
PROJECT LOCATION	Kangerlussuaq, Greenland
PROJECT PURPOSE	In 2012, extreme melting of the Greenland Ice Sheet resulted in overbank flooding of the Watson River and a complete washout of the Watson River Bridge. The bridge has been rebuilt, which provides a new platform to install a radar sensor to measure water level, along with an air temperature/relative humidity sensor.
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AWARD & COMPLETION DATES	Awarded: January , 2015 Completion: February, 2015

**US Army Corps of Engineers, Cold Regions Research & Engineering Laboratory*

EQUIPMENT & SERVICES	Water Level Station ▸ 9210 Data Logger ▸ Iridium Modem ▸ AT/RH Sensor ▸ Water Level Radar Sensor ▸ 30 Watt Solar Panel ▸ 55AH, 12 VDC Battery
TELEMETRY	Iridium Satellite Communications
RESULTS & BENEFITS	After a quick and successful installation of the sensors and Data Collection Platform on the newly built Watson River Bridge, the CRREL is now able to remotely monitor the water level in the Watson River in near real-time using the SutronWIN website.