FINAL REPORT
DTPH56-11-G-PHPT19
Marine Pipeline Automatic Identification and Location Notification to Mariners for Damage Prevention

The Greater Lafourche Port Commission is a political subdivision of the state of Louisiana and exercises jurisdiction over Bayou Lafourche and Port Fourchon. Port Fourchon, located within the Barataria – Terrebonne National Estuary, is essentially a small city with 250 businesses servicing 90% of the deepwater structures in the Gulf of Mexico. Over 50% of pending deepwater structures will also have the port as their service base. The entrance to the port is in very close proximity to a dense network of marine natural gas and liquids pipelines which make up part of an estimated 63,000 miles of pipelines in coastal Louisiana and the Gulf of Mexico. Each day approximately 270 large supply vessels traverse the port's channels and 1.15 million barrels of crude oil is transported via pipelines through the port. Sharing the waterways under Port authority are the vessels that participate in the commercial fisheries of the Gulf of Mexico; shrimp trawlers, oyster dredges, Menhaden fishing trawlers and long-line vessels.

We submitted our Technical Assistance Grant application for the continued development and implement a marine pipeline public awareness program for mariners and the research, selection and implementation of an AIS AtoN System for pipelines in the Port Fourchon area. The Automatic Identification System (AIS) was conceived as a means of communicating position and identity of ships to shore and to other vessels. The idea is that each vessel is uniquely identifiable and each vessel can see who is around them. Virtual AtoN make mariners aware of an incident or hazard by marks presented on an electronic display, providing a timely warning to vessels. The initial objective was to mark pipeline crossings in the Port Fourchon area and have a message sent to vessels that they were in close proximity to a submerged pipeline and issue a warning not to anchor, spud, or dredge

Shortly after award of the grant, communication with the United States Coast Guard was initiated with David P. Ledet, USCG Sector 8. Mr. Ledet's role with the USCG is to approve all Aids to Navigation applications. Mr. Ledet recommended that we contact Mr. Jorge Arroyo, Program Manager, USCG AIS Program in Washington D.C. to received approval for the use of AIS technology in the Pilot Project. A meeting was held with Mr. Arroyo in Washington D.C. in May 2012 to receive his recommendations for the pilot project and what would be required for his approval. Mr. Arroyo is a recognized expert world-wide in the use of AIS technology and is a member of several industry committees that establish the standards for the use of AIS.

He suggested that we establish a monitoring zone around each pipeline crossing. When an AIS equipped vessel enters the zone and the AIS status goes to "Anchor" or the vessel speed equals "zero knots," the vessel would receive an AIS Special Message that they are in a pipeline zone, do not anchor, dredge, or spud. He also said that rather than use the technology on a private basis by industry, that if the pilot project is successful, that within three years the USCG would be ready to use the technology on all pipelines in navigable waterways. Mr. Arroyo recommended that we collaborate with an organization, Port Vision, which is currently utilizing AIS vessel monitoring capabilities in many Ports around the United States.

Port Vision has been leading the AIS project since last summer. Their software is currently monitoring three pipeline crossings in the Port Fourchon jurisdiction. These pipeline crossing are shown in an attachment and referred to as Cable 1, 2 and 3. Each time an AIS equipped vessel enters the pipeline zone and either reduces their speed to "zero knots," or moves their AIS status to "Anchor" the system is able to identify the vessel and location and sends an email message to the pipeline operator. Vessels are not currently being notified that they are in close proximity to a pipeline. The notification is not being sent electronically to the vessels because the USCG has not been willing to approve the required FCC license for broadcast of the AIS message.

This is the first time this technology has been used in this capacity and this is the first application received for use of the AIS messaging capability, it has been an learning process for everyone involved. Port Vision is now receiving technical assistance and guidance from the Radio Technical Commission for Maritime Services (RTCM) and is preparing a fourth radio license application. The RTCM is an advisory group to the USCG on AIS technology and we are confident that with their assistance we will be able to receive approval of our application and begin broadcasting the AIS messages to vessels entering a pipeline-crossing zone. We are continuing work on this project and will inform you with AIS broadcasting begins. While this has taken longer than expected, we anticipate much greater benefits if USCG is able to adopt the technology on all navigable waterways, with the implementation of electronic chart usage on vessels.

As part of the continuing commitment to marine pipeline damage prevention, an online training module was developed as an additional training tool to the safety dvd that was developed earlier. The training module is available online at the website of our industry partner, Coastal and Marine Operators Group, and may be viewed at CAMOGROUP.ORG. Upon completion of the training module, the mariner is able to print out a record of course completion for their safety department, project managers, or supervisor.

With the support equipment provided through the PHMSA Grant, we are continuing to support the education of mariners on submerged pipeline systems at Public Awareness Meetings and conventions, again through our industry partner CAMO, at multiple venues throughout Louisiana including;

2012 Louisiana Damage Prevention Summit, Baton Rouge, LA
2012 Coastal and Marine Operators Damage Prevention Workshop, Larose, LA.
2012 International Workboat Show, New Orleans, LA
2012 Louisiana Pipeliners Association.

Thank you for supporting mariner safety and we will keep you updated as we see the AIS project through to the final stages.

Below are copies of email information that was sent for one monitoring location on one day. Easily over a hundred notifications have taken place for vessels entering the pipeline monitoring zones and reducing their speed to zero knots. This is included to demonstrate that the vessel monitoring capabilities are in place. We are currently waiting on the FCC license approval for broadcast warnings to vessels. This message below is emailed to pipeline operators so a warning message is not included.

Vessel: CANDACE has arrived at Cable3 at 2012-09-27 15:53 CST at 0.1 knots
Alert Location: 29.092978, -90.223712
Alert Location Map: http://app.portvision.com/MapView.aspx?lng=-90.2237116666667&lat=29.0929783333333
Current Vessel Location Map: http://app.portvision.com/MapView.aspx?vid=4016
To unsubscribe from this alert click or paste this link into your browser:
http://app.portvision.com/ws/Unsubscribe.aspx?eqs=CSGFHV8zMQ%2b6%2fWFaYL9Xc5KCDPCEBVdhEJG83FdMeochbRiLNGfcTO9kuuLdoHT6

Vessel: VIRGINIA has arrived at Cable3 at 2012-09-25 19:32 CST at 0 knots
Alert Location: 29.095167, -90.222667
Alert Location Map: http://app.portvision.com/MapView.aspx?lng=-90.2226666666667&lat=29.0951666666667
Current Vessel Location Map: http://app.portvision.com/MapView.aspx?vid=9997
To unsubscribe from this alert click or paste this link into your browser:
http://app.portvision.com/ws/Unsubscribe.aspx?eqs=CSGFHV8zMQ%2b6%2fWFaYL9Xc5KCDPCEBVdhEJG83FdMeochbRiLNGfcTO9kuuLdoHT6

Vessel: GERARD D has arrived at Cable3 at 2012-09-27 15:19 CST at 0 knots
Alert Location: 29.095497, -90.222532
Alert Location Map: http://app.portvision.com/MapView.aspx?lng=-90.2225316666667&lat=29.0954966666667
Current Vessel Location Map: http://app.portvision.com/MapView.aspx?vid=5741
To unsubscribe from this alert click or paste this link into your browser:
http://app.portvision.com/ws/Unsubscribe.aspx?eqs=CSGFHV8zMQ%2b6%2fWFaYL9Xc5KCDPCEBVdhEJG83FdMeochbRiLNGfcTO9kuuLdoHT6

Vessel: VIRGINIA has arrived at Cable3 at 2012-09-27 07:16 CST at 0.1 knots
Alert Location: 29.093167, -90.223500
Alert Location Map: http://app.portvision.com/MapView.aspx?lng=-90.2235&lat=29.0931666666667
Current Vessel Location Map: http://app.portvision.com/MapView.aspx?vid=9997
To unsubscribe from this alert click or paste this link into your browser:
http://app.portvision.com/ws/Unsubscribe.aspx?eqs=CSGFHV8zMQ%2b6%2fWFaYL9Xc5KCDPCEBVdhEJG83FdMeochbRiLNGfcTO9kuuLdoHT6

Greater Lafourch Port Commission

AIS Pipeline Monitoring Project Timeline