Evans Roger

From: rmooney[redacted]
Sent: Friday, April 19, 2019 10:28 AM
To: Evans Roger
Cc: Garcia Anne; Beaton Robert; Jenner Steve; Hoepf Michael; Gunaratnam Rachael
Subject: Re: PLD18MR003 -- Merrimack -- Document Request of 11APR2019 -- GIS, Optimain, Wagaman, etc.
Attachments: NTSB_2018 South Union_System Planning Review 5.pdf

Roger, per your request, please find the following responses to your first two question in the attached information request. Due to the length of the responses, I will provide responses to the additional questions in a separate email.

1. A brief description of CMA GIS that includes:

- Functionality
  ArcGIS/ArcFM – ArcGIS is the root GIS database application from Esri, whereas ArcFM is the utility specific toolset that sits on top of ArcGIS. These are the applications used for all our GIS database editing, as well as the vast majority of our GIS analysis, querying, reporting and thematic map development. ArcGIS provides the core spatial database management tools; plus typical map navigation, elaborate database editing, tabular querying, spatial querying, and reporting tools. ArcFM manages simultaneous editing sessions, the application of quality control rules, and the resolution of session conflicts. ArcFM also provides a number of preconfigured traces of the geometrically connected features, such as Gas Pressure System Trace, Gas Cathodic Protection System Trace, Gas Valve Isolation Trace, etc. Access to these applications are controlled by an active directory with editing/viewing privileges being limited by dataset.
  Network Express (aka 3-GISWeb) – built on ArcGIS Server, this browser-based GIS viewer is utilized both in the field and in the office. Configurable views, or map services, allow for different functional groups to see only the GIS data they are interested in seeing and symbolized the way they need/wish to see it. Currently CMA has five (5) different map services: Gas Total, Engineering, Damage Prevention, Survey & Land, and New Business. All these map services are looking at the live Production GIS database. Besides simply looking at the data in a map view and as a display of descriptive attribute data based on a manual selection from the map, Network Express allows for selections to be made from SQL database queries and bounded spatial queries. Users can also print/plot from this application, plus run "canned" reports on valves, regulator stations, and gas mains. Access to this application is controlled by an active directory.
  ArcReader – a static GIS viewer used predominately in the field on MDTs. This viewer allows the users to view facility, landbase, leak reports, customer points, etc. in a map-like view, as well as viewing descriptive attribute information on features they have selected and other hyperlinked documents and drawings. The data all originates in the enterprise GIS database. Updates to the data are published monthly and delivered to the end users via DVD. End users are responsible for loading these updates to their **devices**. Other than basic navigation functionality (i.e. finding street addresses, searching for particular features, measuring, and going to lat/long coordinates), there is not analysis or query functionality in this application.
  ArcGIS Online – a cloud-based mapping and analysis tool hosted by Esri that can be utilized to collect data, analyze data, share data, and make maps. In particular CMA has utilized the following ArcGIS Online tools:
  Collector – a map-centric mobile application used to collect and report field data.
  Survey 123 – a form-centric application used to collect and report data**.**
  Operations Dashboards – web app that provides location-aware data visualization and analytics for a real-time operational view of people, services, assets, and/or events.
  Web Maps – interactive display of geo-referenced data that you can use to tell stories and answer questions. These maps can be shared online, either internally or externally.
  Story Maps – a vehicle to combine authoritative maps with narrative text, images, and multimedia content to tell a story.
- When GIS went live
  Lawrence Operating Area – 7/11/2011
  Brockton Operating Area – 12/4/2012
  Springfield Operating Area – 3/6/2013

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- How the GIS is administrated (vendors, attributes within the system, attribute maintenance)

The CMA GIS application is “owned” by the IT Business Application Support (BAS) GIS Support group. With their external IT service provider, Tata Consulting Services (TCS), they are responsible for the system health and usability. This includes administering database accesses and editing roles/privileges, as well as typical database “health” items such as backups, compressions, indexing, software upgrades, and overall end user support. They are also responsible for all application or data model changes requested by the business – this includes evaluating the requests, vetting the requests through all NiSource companies (Note: while each company has its own GIS database, NiSource has a single, consistent GIS data model), implementation, testing, and deployment. The NiSource GIS Support group handles most of the functional and end user side of these tasks, while TCS handles most of the back office tasks.

- How Optimain data are integrated within the GIS
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There is a two way passing of data between the GIS and the Optimain application. Optimain accesses the live GIS data, utilizing gas main location and attribute information in their risk assessment algorithms. Optimain then returns to GIS **certain** customer and leak report information (both also used in their risk assessment), and Optimain Project information via a daily update version.

2. When did NiSource learn that the sensing lines were not represented within the GIS?

Sensing lines were not an attribute that was included in the GIS deployment. Hard copy records of sensing lines were readily available to employees in the operating center.

Please let me know if you have any questions or require additional information.
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Rob Mooney
VP, Engineering and Pipeline Safety
NiSource, Inc.
[redacted]

From: Evans Roger [redacted]
To: "rmooney [redacted]
Date: 04/11/2019 09:04 AM
Subject: PLD18MR003 -- Merrimack -- Document Request of 11APR2019 -- GIS, Optimain, Wagaman, etc.

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Rob,

Please provide the following:

1. A brief description of CMA GIS that includes:

- Functionality
- When GIS went live
- How the GIS is administrated (vendors, attributes within the system, attribute maintenance)
- How Optimain data are integrated within the GIS

2. When did NiSource learn that the sensing lines were not represented within the GIS?

3. Besides the M&R notebooks that contain the sensing line isometrics, how were sensing line locations communicated to CMA employees?

4. Work Management System – Prior to WMS, what system was used for managing projects? When did WMS go live within CMA?

5. Optimain:

- Provide a brief description of NiSource's Optimain application (relevant department that manages and administrates the system, interface to DIMP, interface to GIS, etc.).
- When did the version of Optimain in use at the time of the incident come on-line for Massachusetts?

6. Lynn Wagaman's process modeling program in response to Louie DeRoxas' request (see attached email thread):

- Provide a brief description of the software application used by Lynn Wagaman. Include:
  - Name of application,
  - When did CMA begin using the application?
  - Provide printouts, if available, for flow and pressure analysis runs prepared for the South Union project.

7. What are Lynn Wagaman's roles and responsibilities?

- Who does he report to (org chart)?

8. When in the design process, do engineers such as Louis DeRoxas request design guidance/input from Mr. Wagaman? Please provide documentation for this stage of the design process.

Thanks,

Roger

Roger D. Evans
Senior Pipeline Incident Investigator
National Transportation Safety Board
Office of Railroad, Pipeline, and Hazardous Materials Investigations
[redacted]