NPMS Public Meeting
November 17, 2014
Meeting Notes

INTRODUCTION

The Pipeline and Hazardous Safety Administration (PHMSA) held a public meeting on the Notice of Proposed Rulemaking (NPRM) for updated data collection standards for the National Pipeline Mapping System (NPMS) on November 17, 2014. Representatives from pipeline operators, industry organizations, government agencies, the public, and the media were all in attendance. The purpose of the meeting was to gather feedback on the proposed information collection which is currently out for comment.

GOVERNMENT PANEL

Moderator: Christie Murray

Panelists:

- Amy Nelson (PHMSA)
- Chris Hoidal (PHMSA)
- Jack Fox (TSA)
- Sean Mangan (MN Office of Pipeline Safety)
- David Cullom (WA Utilities and Transportation Commission)
- Thomas Miller (Sissonville, WV Fire Department)

Key Themes:

- The current spatial accuracy of 500 feet is not sufficient for emergency response and inspection needs.
- Better pipeline data could benefit many parties including PHMSA, local responders, pipeline operators, and the public. For example:
    - PHMSA intends to use the data for inspection planning, recording, and coordination; regulatory and risk analysis; refining the scope of inspections; and assessing operator programs and procedures.
    - First responders use NPMS but also coordinate directly with operators; however, methods for obtaining relevant and timely information are not complete, nor consistent for their incident management needs. Better data would help emergency responders appropriately respond and effectively communicate with all parties during pipeline incidents.
    - State regulators are reliant on the data PHMSA collects but may also augment with their own GIS systems.
    - Operators could use this data to more efficiently allocate resources.
- Certain states are already implementing more stringent data collection requirements and have GIS systems to manage their own enforcement and emergency management activities; however, agencies that do not have their own systems are highly reliant on NPMS data.
- Accurately modeling positional location not only applies to pipeline data, but also to other data used in a GIS system to identify and manage risks (such as the location of other infrastructure like electrical wires).

INDUSTRY PANEL

Moderator: Christie Murray

Panelists:

- Scott Currier (TransCanada, INGAA)
- Mark Warner (Questar, INGAA)
- Danika (Enterprise Products, API)
- Katy Hellfritz (Xcel Energy, AGA)
- Jerome Themig (Ameren Illinois)

Key Themes:

- Pipeline operators appreciate the value of the NPMS for public and private use and are willing to make data collection improvements to improve the usefulness of NPMS, but not to the extent that PHMSA has proposed.
- The diversity of pipeline operators and operations needs to be considered (e.g., operators vary with their current GIS capabilities, and smaller operators may not have the budget or staff capacity to adopt new GIS systems; and different users have different data needs).
- Updating geospatial data collection capabilities to meet the proposed standards will be a complex, laborious, and expensive effort for the operators because of the following factors: the number of new attributes, level of accuracy, geospatial referencing, lack of existing data, and development of new business processes.
- Ensuring the security of data (especially SSI and commercial data such as throughput) is a big concern (i.e., which data the public can see, data that might be accessed by hackers).
- Operators believe certain attributes may not be relevant or provide additional benefit. Identifying the strategic intent, use and availability of the information requested by PHMSA could help to prioritize data collection.
- **Recommendations:**
    - A stakeholder working group could inform further development and data collection for the NPMS and leverage stakeholder GIS experience.
    - Pipeline operators would prefer a phased approach to implementation because it will be difficult to implement these new standards quickly (i.e., operators need to undergo change management in their organizations to change processes; collect and accumulate data; and ensure data integrity through validation methods).
        - Although not a regulation, OMB will require PHMSA to address requirements in the Paperwork Reduction Act to estimate costs. A phased approach might result in smaller incremental costs that are easier to justify.
        - Capturing positional accuracy of pipelines varies with survey methods; inline inspections can help but not all pipes are piggable. Accuracy thresholds should be implemented over time so industry can plan, budget, and execute efficiently.
    - Make positional accuracy greater than 5 feet (at least 50 feet).
    - Require fewer, but relevant attributes.

INDIVIDUAL PRESENTATION NOTES

Amy Nelson, GIS Program Manager, PHMSA

There are several reasons why the additional data is needed:

- The Pipeline Information Management Mapping Application (PIMMA) is not just used by PHMSA; about half of the 8000 users are local emergency responders.
- There are many basic pieces of information about pipelines missing from the current data set, and information that is available cannot be tied to specific segments.
- Spatial accuracy of 500 feet is not sufficient for emergency response or inspection needs.
- PHMSA would like to update the system to better support inspections, regulatory development, assessment of operator programs/procedures, risk analysis and resource allocation, public awareness, and incident response.

Chris Hoidal, Western Region Director, PHMSA

There are several reasons why the proposed information is necessary to improve performance of pipeline inspection and operation. Better information could help local agencies and pipeline operators in the following ways:

- Allocate resources to the highest risk pipelines.
- Determine the scope of and plan for pipeline inspections by focusing on recent changes to the pipe (e.g. MOP change, recent assessments). Agencies could better determine which physical aspects of the pipeline to inspect (e.g. right-of-way conditions at river crossings and landslide areas) and which questions to ask operators.
- Adequately respond to questions from the public.
- Accurate NPMS data is critical to populating PHMSA's relative risk inspection model (RRIM) for scheduling pipeline system audits.
- Provide timely response to environmental changes by fully understanding how the pipeline system interacts with other environmental factors.
- Enhance emergency response by quickly determining where to mobilize first responders and syncing expectations between all parties (i.e., PHMSA, first responders, public, and operators) during an incident.
- Improve operator safety programs.

During incident follow-ups, operators are typically very forthcoming about pipeline information (i.e., they know exactly where the pipelines are, who the contacts are, etc.). This information should be available beforehand.

Jack Fox, Transportation Safety Administration

PHMSA takes several precautions to protect the security of pipeline information:

- In order to get access to the PIMMA, operators must undergo identity verification, and Federal employees must sign a contract stating they will not share the data in addition to this. Operators can only see their own data, and Federal employees can see raw data for the whole country. Very rarely, PHMSA finds that the data has been released in an unauthorized manner; however,

it has always been inadvertent and quickly removed. Freedom of Information Act (FOIA) requests have never had to go to court.
- PHMSA monitors all servers for suspicious activity, and no hacking attempts have ever occurred.

PHMSA and TSA have been working together to identify the sensitivity of different pieces of information:

- **Potential SSI**: average daily throughput, highest percent operating SMYS, MAOP/MOP, HCA segment or "could affect" HCA segment; special permit segment. This data would not be on mapping system.
- **Potentially available to public**: commodity detail, offshore gas gathering line, onshore/offshore.
- **Potentially available to government officials**: All attributes not aforementioned.

Sean Mangan, GIS Program Manager, Minnesota Department of Public Safety, Office of Pipeline Safety

There are several reasons why more accurate pipeline data should be available:

- During a pipeline incident in 1986, emergency responders did not know where exactly the corrupted pipeline was, what was in it, etc. After this incident, Minnesota Department of Public Safety created the Office of Pipeline Safety.
- Minnesota uses the NPMS as the authoritative source for pipeline data used to inspect pipelines, investigate incidents, conduct damage-prevention activities, and for homeland security. They also refer all questions and requests for pipeline data to the NPMS. However, the office has concerns with the current systems such as data security, and availability.
- Minnesota Office of Pipeline Safety gets requests from pipeline operators, emergency responders, state and local GIS representatives, and concerned citizens for assistance on identifying high consequence areas (HCAs) and class locations, among other things. More accurate data could benefit all of these parties.
- One example of inaccurate data is that there was an error in NPMS where the pipe was marked as 650 feet from the actual location. On the map, it was not marked as an HCA, but in reality it was right next to a daycare center and should have been classified as HCA.
- Lack of data could lead to a poor public perception of regulatory agencies.
- Missing data (such as information on incidents, excavation, commodity, diameter, age, depth of pipe, and blown down lines) hinders regulators' ability to conduct inspections and investigations into pipeline incidents, and limits their ability to make effective decisions.
- For many questions asked during emergency situations, the data needed to answer these questions is not currently collected (e.g., product, diameter, pressure/flow, evacuation radius, age, depth, location of valves).

David Cullom, Pipeline Safety Engineer, Washington State Utilities and Transportation Commission

- In 2000 there was a pipeline incident in Bellingham, WA. After this incident, the WA State legislature passed the Pipeline Safety Act which includes the mapping of pipeline locations. WA is now very progressive in terms of pipeline data collection.

- Washington State collects many additional attributes to what is currently required by Federal law. They have a standard of +/- 40 ft. at a scale of 1:24,000 for rural areas and even more accurate in urban areas. They also collect district, wall thickness, grade, type of seam, percent of pre-1970 pipe, pipe manufacturer, coating type, cathodic protection system, maximum allowable operating pressure, maximum operating pressure, working pressure, percent SMYS at MAOP, type of valve operators, and inspection-related attributes. Some of these are data attributes PHMSA is proposing to collect, and others are not.
    - This GIS system is one example of a pipeline mapping system that provides accurate and relevant information for multiple stakeholders.
- Washington State uses a variety of mapping applications that provide benefits to stakeholders such as emergency responders.

Thomas Miller, Fire Instructor, Sissonville, WV Fire Department

- There was a pipeline incident in Sissonville, WV on December 12, 2012 (this was one of two in the area in ten years). Several issues with current pipeline data emerged as a result of this incident:
    - The initial report cited an incorrect operator. This made it difficult to get in touch with the actual operator.
    - In the same right-of-way, there were 6 pipelines all of different diameters, and responders were not able to identify which line caused the incident.
    - The incident destroyed the e-commerce infrastructure two weeks before Christmas; however, the line was not considered as crossing a HCA. The current definition of HCA does not address where pipelines cross key infrastructure.
    - When emergency responders zoomed in to the explosion, the map brought them to Fairfax, Virginia which is hundreds of miles away from the actual incident location.
    - The pipeline that exploded split into 12 different lines a bit further down from the explosion; it was hard to track whether and where there might be a second or third incident.
- In Charlestown, WV, there is a location with several large gasoline tanks within 50 feet of a four lane highway. This is an example of where having positional accuracy is important. The current level of accuracy needs to be narrower.
- The DOT emergency response guide (ERG) does not contain sufficient standards for pipeline incidents.
- Many rural fire departments do not know about NPMS and the PIMMA. Rural first responders need more visibility about pipelines and NPMS in emergency response guidance (DOT ERG) and leveraging existing platforms and standards such as NIMS curriculum, DHS job aids and information distribution under API RP 1162 and 1174.
- A contractor, Celeritas, is working on an “identified sites registry” to identify “congregation” sites. They have been contacting local responders for information about pipelines, but it is not clear to local agencies whether this data is part of NPMS.
- NPMS is missing key pipeline information such as infrastructure crossings, distribution and gathering lines.

Highlights from Government Panel Question and Answer Session

- Our company's data is not geospatially accurate; our company emphasizes positional accuracy for internal clarity purposes (e.g. if there is a line at an intersection, we will mark it as being by the intersection, not by latitude/longitude). There is a difference between reporting at the Federal level where there are consequences and reporting internally. For example, in very rural places like the Nevada dessert there are no roads or intersections to mark accuracy by; the positional accuracy is not 5 or 50 feet here.
- Attendees asked questions related to the following topics:
    - Is there guidance on best technological paths to achieving infrastructure that will support the standards PHMSA is requesting?
    - How will PHMSA communicate the change in accuracy to the public?
    - What is PHMSA doing to ensure the security of data that is SSI if there are thousands of officials with access to the NPMS data?
    - Is PHMSA addressing the possibility of data redundancies between the annual report and NPMS data submissions?
    - What is being done to resolve the different terminology used for pipeline status between the PHMSA annual report and NPMS?
    - How does PHMSA plan to make the NPMS dataset more up-to-date?
    - What role does the government want to play in incident response?

Scott Currier, TransCanada, representing the Interstate Natural Gas Association of America (INGAA)

- One concern is that spatial accuracy is cumulative. There are many steps to building a comprehensive GIS layer (i.e., first identify centerline of pipe with photographic image placement or professional survey), and there may be projection errors .
- All INGAA members have working GIS systems that are constantly evolving; are conservative in reporting pipe segments; and store attributes in different ways which could make standardization of data elements difficult.
- INGAA conducted a survey which concluded that emergency responders prefer to go to pipeline operators for information, and prefer digital or paper maps with photo backgrounds (see slides for more detailed information about the survey).
- It is unclear in the Federal Register Notice whether the 5 foot and 50 foot positional accuracy applies to both centerline and linear attributes.
- INGAA recommends data collection be synched with the integrity management processes.

Mark Warner, Chief DOT Compliance Officer, Questar, representing INGAA

- INGAA agrees with improving data accuracy and information in NPMS; however, industry will need time to improve pipeline alignment and attribute data. A phased-in approach is preferred.
- The five foot accuracy is difficult to achieve because there are too many places where there could be errors and attaining this level of accuracy would take a lot of time and money (e.g., would require major GIS upgrades). However, actually positional accuracy of pipelines is better than what operators currently report to PHMSA since they are generally more conservative.

- Several proposed attributes are unnecessary because there are data points already collected that can suffice for them.
- INGAA proposes that PHMSA only collect what they believe to be relevant data for NPMS' intended use; these data attributes include: HCA/method 1 or 2, material, diameter, coating/cathodic protection, piggable, commodity, and SMYS.
- INGAA estimates that implementing these new standards (i.e., developing GIS systems that could capture this level of data, and collecting the data) would cost approximately $820 million just for members of INGAA (about $12K/mile).

Danika, Enterprise Products, representing the American Petroleum Institute (API)

- API and the Association of Oil Pipe Lines (AOPL) support the modernization of NPMS; however they have several concerns with the proposed rule:
    - Commercially sensitive or confidential information (e.g., throughput, pump stations, ground valves) proposed for inclusion raises concerns.
    - Industry needs time to meet the requirements because several attributes require significant technological upgrades and shifts.
    - Positional accuracy of 5 feet is not achievable with current technologies; 50 feet is more reasonable.
- API and AOPL support a phased approach to implementing several of the proposed attributes including pipeline diameter, pipe grade, leak detection, pipe coating (align with commonly used names), pipe material, predominant join method, year of construction, onshore/offshore (need more characterization here though), in-line inspection suitability, predominant wall thickness, predominant seam type, location of abandoned pipeline, installation method if pipe crosses body of water greater than 100 feet (this would be very challenging – could do this for new pipelines).
- API requested that the term "predominant" be defined and used to identify the major attribute of a segment of pipe when a pipe has variances within a segment for that attribute.
- PHMSA should consider creating a working group comprised of PHMSA, state regulators, emergency responders, and industry representatives to discuss data collection issues.
- API estimates that implementing these new standards would cost approximately $10 million/year for 10 years.

Katie Hellfritz, Xcel Energy, representing the American Gas Association (AGA)

- There are several concerns and anticipated challenges with the proposed regulation:
    - Pipelines are limited to the schematic representation which hinders geospatial referencing. If data is not there, operators make very conservative assumptions in terms of risk assessments.
    - The proposed regulation requires a business process change (i.e., adjust for the costs; obtain the human skills and experience).
    - Even if operators have the data, it does not mean it is accurate; this could become an unintended consequence (i.e., operators just populate data versus validate it in the NPMS).

    - Data security is a concern (who would have access to SSI, and how PHMSA/DOT would hold people accountable for the leak or misuse of data).
    - Not every operator is able to use/obtain certain technologies (e.g., smaller operators may not have the budget), and they should be afforded flexibility to direct limited funds.
- AGA is willing to change their current data collection; however, they hope PHMSA will consider their concerns.
- AGA estimates that implementing these new standards would cost approximately $24 million for a two year project:
    - 75 people (mix of engineers, SMEs, IT): 2 yrs, $24 M
    - Centerline and depth of cover: $20M
    - Challenges with data availability, paper records, incomplete geospatial referencing, attributes not linked to source records re-routs not synched, etc.,
    - Required modifications in design, procurement and record keeping processes

Jerome Themig, Ameren Illinois

- Ameren Illinois collects many of the proposed data elements but not in GIS format; GIS is not necessarily capable of handling all of these fields.
- Operators need resources to replace aging infrastructure and do not want to spend too much money on collecting data they may not need.
- Ameren costs for gas transmission lines geospatial system:
    - Centerline surveys: 3-5 yrs, $3M
    - Conflation: 2-3 yrs, $2M
    - Documentation management systems: 3-5 yrs, $7M
    - Data Integration and Development: 3-5 yrs, $5M

Highlights from Industry Question and Answer Session

- Our company takes a conservative approach to populating data we are not confident is accurate. In some cases, our company does not have seam type and we do not have the level of confidence to populate it. In some cases we are populating a field, but it is with assumed value (i.e., not verified).

ATTRIBUTE MATRIX AND PROPOSED PHASING

The matrix below provides a comparison of PHMSA proposed data collection requirements and the phasing approach recommended by INGAA and API.

		PHMSA			INGAA			API		
Item #	**Attributes**	**Proposed**	**Phase**	**Security Level [1] (proposed)**	**Proposed**	**Phase**	**Security Level**	**Proposed**	**Phase**	**Security Level**
1	Positional Accuracy: HCA, Class 3/4 Class 1 and 2	5 ft 50 ft	1	Maintain current zoom limit on public viewer	<=50, >=51 A =100, >=100	1	n/a	50 ft	2	NPMS
					70% w/in 50 ft 30% w/in100	2	n/a			
					50 ft w/in PIR with Pop	3	n/a			
2	Pipe Diameter (mandatory)	x	1	PIMMA	x	1	n/a	Predominant	1	NPMS
3	Maximum Allowable Operating Pressure (MAOP), Maximum Operating Pressure (MOP)	x	1	SSI						
4	Pipe Grade	x	1	PIMMA				Predominant	2	PIMMA
5	Percent Specified Minimum Yield Strength (SMYS)	x	1	SSI	<30% SMYS	1	n/a			
6	Leak Detection	x	1	PIMMA				x	2	PIMMA
7	pipe Coating/Type of Coating	x	1	GP or PIMMA	Coated Y/N Cathodic Y/N	1	n/a	Predominant	3	PIMMA
8	Type Pipe Material	x	1	GP or PIMMA	x	1	n/a	Predominant	1	PIMMA
9	Pipe Join Method	x	1	GP or PIMMA				Predominant	2	PIMMA
10	Year of Construction/Installation (predominant)	x	1	GP or PIMMA				by decade	1	PIMMA
11	Class Location	x	1	GP or PIMMA						
12	High Consequence "Could Affect" Areas	x	1	SSI						
13	Onshore/Offshore (GG?)	x	1	GP				PHMSA Def	1	NPMS
14	Inline Inspection	x	1	GP or PIMMA	x	1	n/a	x	1	PIMMA
15	Year of Last Inline Inspection and Year of Last Direct Assessment	x	1	PIMMA						
16	Year and Pressure of Original and Last Hydrostatic Test	x	1	PIMMA						
17	Commodity Detail	x	1	GP	x	1	n/a			
18	Special Permit	x	1	SSI						
19	Wall Thickness	x	1	PIMMA				Predominant	1	PIMMA
20	Seam Type	x	1	GP or PIMMA				Predominant	2	PIMMA
21	Abandoned Pipelines	x	1	GP (TBD)				prospectively	1	NPMS
22	Offshore Gas Gathering Lines	x	1	GP						
23	Installation Method if Pipe Crosses Body of Water Greater Than 100 Feet in Width	x	1	PIMMA				prospectively	2	NPMS
24	Facility Response Plan	x	1	PIMMA				x	1	PIMMA
25	Throughput (avg daily)	x	1	SSI						
26	Breakout Tanks (mandatory)	x	1	GP				x	1	PIMMA
	Separate GIS Layers									
27	Mainline Block Valve Locations	x	1	PIMMA						
28	Storage Field Locations and Type of Storage	x	1	PIMMA						
29	Refinery Locations/Gas Process/ Treatment Plant Locations	x	1	PIMMA						
30	LNG Plants:	x	1	PIMMA						
31	Pump and Compressor Stations	x	1	PIMMA						

Notes: *(1) GP is general Public*