

## Pipeline Safety New Voices Project

### Emergency Response and Spill Response Planning



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Some pipeline operators are required by federal law to prepare two different kinds of emergency plans. Often these two different types of plans get confused in discussions leading to frustration from all those involved, so we have provided descriptions of both types here to try to avoid confusion and frustration. There are emergency plans required for both natural gas and hazardous liquid pipelines which basically include planning for how to train and respond to releases, who in the company has responsibilities, and how a company educates and involves emergency responders (such as fire departments) in their planning. These plans are covered under the regulations for gas at 49 CFR 192.615 and for liquid pipelines at 49 CFR 195.402 & 403.

The second type of plan only applies to hazardous liquid pipelines and is often referred to as a spill response plan or a facility response plan. These are much more detailed plans about how the company will respond to clean up fuels that escape the pipeline that may affect water. In these plans the company needs to spell out worst case scenarios and show precisely where equipment and personnel are available that can respond within certain timeframes to contain and clean up the spill. These are also the plans that companies have to train and drill for. These plans are covered under the regulations at 49 CFR Part 194.

#### 1. EMERGENCY PLANNING

##### A. Natural Gas

The regulations governing natural gas transmission operators' obligations for emergency planning are found in 49 CFR 192.615. The regulations for gas emergency plans are not complicated and are quite short. Although each section has a few descriptive clarifiers, it boils down to this:

- 1) Each operator has to have a written plan on how it will respond to a list of various emergencies, including personnel and equipment available, shutdown procedures, notification of fire, police and other public officials, service restoration, etc.



- 2) The plan has to be furnished to supervisors, employees must be trained to it, and following an emergency, actions must be reviewed to determine if the plan was followed; and
- 3) Each operator “shall establish and maintain liaison with appropriate fire, police and other public officials” to coordinate responses and preparedness planning.

That last requirement, to maintain a liaison with local first responders, is one aspect of PG&E’s emergency planning efforts that came under serious scrutiny following San Bruno, when the San Bruno fire chief was quoted as being completely unaware that there was a gas transmission line in that neighborhood. Following San Bruno, PHMSA issued an advisory bulletin to operators of both natural gas and liquid pipelines, [ADB-10-08](#), reminding them of their regulatory obligations to make their pipeline emergency response plans available to local emergency response officials. That advisory bulletin stated:

*“To ensure a prompt, effective, and coordinated response to any type of emergency involving a pipeline facility, pipeline operators are required to maintain an informed relationship with emergency responders in their jurisdiction.*

*PHMSA reminds pipeline operators of these requirements, and in particular, the need to share the operator’s emergency response plans with emergency responders. PHMSA recommends that operators provide such information to responders through the operator’s liaison and public awareness activities, including during joint emergency response drills. PHMSA intends to evaluate the extent to which operators have provided local emergency responders with their emergency plans when PHMSA performs future inspections for compliance with relevant requirements.”*

The NTSB went even further in its report: one of the many new safety recommendations it made to PHMSA following San Bruno was:

*“Require operators of natural gas transmission and distribution pipelines and hazardous liquid pipelines to provide system-specific information about their pipeline systems to the emergency response agencies of the communities and jurisdictions in which those pipelines are located. This information should include pipe diameter, operating pressure, product transported, and potential impact radius.”*

This recommendation, if implemented, would provide local emergency management and first responders with the information they need to appropriately plan responses and preventative and mitigating measures for dealing with the presence of a transmission line through their jurisdictions.

## **B. Hazardous Liquid Emergency Response Planning**

The emergency planning for hazardous liquid pipelines is similar to that of natural gas. For hazardous liquid pipelines the emergency planning stems from the requirements in 49 CFR 195.402 for a manual for operations, maintenance, and emergencies. The general requirements for that manual state:

*“Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of*

*a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.”*

These manuals are not required to be approved by regulators, and copies of them are not turned in to regulators either, but they are reviewed during regulatory inspections and anything included in the manuals can be inspected for. A couple of sections of the requirements for these manuals are of particular interest when it comes to how the pipeline company interacts with local government for emergencies.

In the section regarding normal operations, pipeline operators are required to include a system for:

*“Establishing and maintaining liaison with fire, police, and other appropriate public officials to learn the responsibility and resources of each government organization that may respond to a hazardous liquid or carbon dioxide pipeline emergency and acquaint the officials with the operator’s ability in responding to a hazardous liquid or carbon dioxide pipeline emergency and means of communication.”*

In the requirements for the emergency section of the manual, the regulations state that during an emergency the pipeline operator must have procedures for:

*“Notifying fire, police, and other appropriate public officials of hazardous liquid or carbon dioxide pipeline emergencies and coordinating with them preplanned and actual responses during an emergency, including additional precautions necessary for an emergency involving a pipeline system transporting a highly volatile liquid.”*

### **Shortcomings of current emergency planning requirements**

The regulations are clear that pipeline operators are supposed to be well prepared to respond to emergencies. It is also clear that they are supposed to have prepared local emergency response agencies with the information they need to respond as well. Unfortunately it is common after incidents to hear local emergency responders claim they had no knowledge of a pipeline within their jurisdiction.

There are two main reasons heard over and over again for the lack of knowledge within the local fire and police departments:



1. Some pipeline operators have failed to adequately and repeatedly provide the necessary information and liaison with local emergency response agencies to ensure those agencies are ready if an incident occurs. This most likely can be cured by increased industry best practices and increased enforcement of these requirements by regulators.

2. Some local emergency response agencies are unwilling to accept and incorporate information that pipeline operators have repeatedly attempted to provide them to ensure those agencies are ready if an incident occurs. This is more difficult to cure since there are no regulations that require these agencies to accept

and incorporate this pipeline safety information, and many of these agencies are spread thin and have a multitude of demands on their attention from a variety of possible low-frequency high-impact disaster scenarios.

## 2. Spill Response Planning for Hazardous Liquid Pipelines

Following the Exxon Valdez oil spill in Alaska in 1989, Congress recognized that federal law lacked specificity with regard to private oil spill planning obligations. Accordingly, in the Oil Pollution Act of 1990 (OPA), which was an amendment to the Clean Water Act (CWA), Congress expanded requirements so that owners and operators of vessels and facilities prepare facility response plans (FRPs).

It is important to understand that these federal laws (OPA) apply only to spills of oil into water or that threaten to flow into water. Where a spill is onto land and does not threaten water, then these planning requirements do not apply.

In the past few years the regulations that apply to pipelines have been analyzed by a number of well qualified people and we borrow heavily from two of them here, and thank their primary authors for their efforts: Paul Blackburn, formerly of Plains Justice and current advisor to Bold Nebraska, and Sara Gosman, a member of this group and principal author of the recently released report from The National Wildlife Federation on the Marshall Michigan spill. We have extracted excerpts from each of their reports, and abridged them significantly for length. If you are interested in this subject we recommend that you read both of these reports for the wealth of detail they provide.

The following section is from the Plains Justice report, *The Northern Great Plains at risk: Spill Planning Deficiencies in Keystone Pipeline System*, 11/23/2010. For those of you interested in reviewing the entire report, you can find it [here](#).

### Overview of the Response Planning Process and Requirements

Federal law establishes a comprehensive system mandating that federal agencies and private companies plan for and respond to oil spills. Central to this system is a hierarchy of oil spill response plans that is intended to ensure that response planning capability is adequate to respond to worst-case oil spills. These range from the nationwide National Contingency Plan (NCP), to regional Area Contingency Plans (ACP), [which are generally prepared by the EPA (onshore) and Coast Guard (offshore)] to more focused Subarea Contingency Plans (SCP) that focus on particular cities and



watersheds, and finally to FRPs that are prepared for specific facilities, such as oil refineries, off-shore oil platforms, and oil pipelines. Since the owner or operator of a facility that spills oil bears primary responsibility under law for cleaning up oil spills, the plans that most impact the effectiveness of response to a particular oil spill are FRPs.

Federal law does not require mere paper planning. The law also requires that private companies have acquired and pre-positioned necessary equipment and personnel before they begin operations. Congress intended that federally mandated plans result in actual boots and equipment on the ground – not boilerplate and conceptual dreaming. FRPs are the mechanism whereby federal agencies can ensure that private companies have the tools they need at hand when something goes wrong. This being said, the NCP, ACPs, and SCPs are important because they are intended to contain detailed standards for FRPs.

### Facility Response Plans

The most site-specific plans required by federal law are FRPs, because they contain detailed plans and requirements for particular facilities such as individual oil refineries and oil pipelines. Since not all onshore facilities are large and not all of them pose a threat of discharge into water, only facilities that could inflict “substantial” harm on the environment by a discharge into waters are required to submit FRPs. FRP’s must:

- be consistent with the NCP and ACPs and SACPs;
- identify the individual who has full authority to implement the FRP and required immediate communication between this individual and federal and private spill response resource providers;
- identify, and ensure by contract or other means, the availability of private personnel and equipment necessary to clean up an oil spill “to the maximum extent practicable;” and
- describe the training, equipment testing, drills, and response actions to be carried out under the FRP.

These FRPs are initially prepared by the facility’s owner or operator. Where a facility could reasonably be expected to inflict significant and substantial harm, the appropriate agency must review the FRP and, if it is in compliance with federal standards, approve it.

The Oil Pollution Act does not specify which agencies oversee spill response planning for different types of private facilities, but rather leaves this to Presidential discretion. Pursuant to Executive Order 12777 (October 18, 1991), the Department of Transportation (DOT) reviews and approves onshore pipeline FRPs, the EPA reviews and approves FRPs for onshore non-transportation facilities (such as oil refineries), and the U.S. Coast Guard (USCG) reviews and approves vessel and certain coastal facilities that transfer oil to or from vessels. Each of these agencies has promulgated regulations to implement its responsibilities.

Federal agencies may require amendments of submitted plans that are not in accordance with federal standards. Facilities that do not have approved plans are not allowed to operate until a plan is approved. Facilities may operate only if they are in compliance with their plans. To provide agencies time to review and approve plans, a facility may operate for up to two years after submitting a

plan if the owner or operator certifies that it has the private personnel and equipment necessary to respond to the maximum extent practicable to a worst-case spill.

### PHMSA’s Facility Response Plan Regulations

PHMSA’s FRP regulations for oil pipelines are contained in 49 CFR Part 194. These regulations exempt certain smaller diameter or shorter pipelines, define which pipelines are required to have their FRPs approved by PHMSA, describe regulatory standards for FRPs, and describe PHMSA’s approval process. Since all long, interstate, large diameter pipelines could reasonably be expected to inflict significant and substantial harm, as a practical result PHMSA is required to approve the FRPs for all such pipelines.

Due to the length of interstate pipelines, PHMSA’s regulations require that the plans be based on delineated “response zones.” Section 194.5 defines “response zone” as follows.



*Response zone means a geographic area either along a length of pipeline or including multiple pipelines, containing one or more adjacent line sections, for which the operator must plan for the deployment of, and provide, spill response capabilities. The size of the zone is determined by the operator after considering available capability, resources, and geographic characteristics.*

As can be seen, the regulations allow operators to define their own response zones based on certain spill response factors. Since the CWA § 1321(j)(5)(D) requires FRPs to be based on worst-case discharges, Section 194.5 defines “worst case discharge” as:

*Worst case discharge means the largest foreseeable discharge of oil, including a discharge from fire or explosion, in adverse weather conditions. This volume will be determined by each pipeline operator for each response zone and is calculated according to § 194.105.*

Thus, worst-case discharges must be determined in light of fire, explosions, and bad weather, all of which may impact the extent of damage caused by a pipeline rupture.

With regard to “response resources,” Section 194.5 defines this term as:

*Response resources means the personnel, equipment, supplies, and other resources necessary to conduct response activities.*

Whereas PHMSA’s regulations do not contain any mandatory equipment standards for the FRP’s it approves, the USCG regulations provide USGC personnel with meaningful detailed standards for

evaluation of USCG-approved FRPs. It is remarkable that PHMSA's FRP regulations do not contain detailed standards for equipment or personnel needed to respond to oil pipeline spills, because determination of the sufficiency of response equipment is not a simple task. It appears that PHMSA allows pipeline companies to define for themselves the extent of their response zones and the type, amount, and location of response equipment and personnel needed to respond to these discharges, but then provides no meaningful standards that would allow PHMSA staff to determine whether or not pipeline operator FRPs are in compliance with the Clean Water Act.

The National Wildlife Federation report, *After the Marshall spill: Oil Pipelines in the Great Lakes Region*, provides a slightly different view: it focuses on the Great Lakes region, and, importantly, describing the opportunity available to states under the Oil Pollution Act to impose independent oil spill planning requirements. The National Wildlife report closes with a series of policy recommendations, including improvements in oil spill response planning regulation. For those of you interested in the full report, it can be found [here](#). Below are some short heavily abridged sections from this report.

### Spill Response Planning and Reporting

Responsibilities under the OPA are split between several federal agencies. The EPA and Coast Guard direct the area planning. For inland zones, EPA designates areas, appoints area committee members, requires that information be included in area plans, and reviews and approves the area plans. The U.S. Coast Guard does the same for coastal zones such as the Great Lakes. While the OPA establishes very broad requirements for area plans, each region's area committee identifies the locations that are sensitive to oil pollution. In turn, this informs the response planning for facilities within each area committee's footprint. PHMSA is responsible for reviewing the facility plans of onshore transportation facilities, including oil pipelines, to ensure that they are in compliance with the OPA and area plans.

PHMSA requires operators to determine the potential worst-case discharge scenario by calculating maximum figures for response times, release times, and flow rates. Additionally, the plans must identify environmentally and economically sensitive areas, divide responsibilities among federal, state, and local responders, and include procedures for spill detection and mitigation. PHMSA's regulations allow operators to incorporate by reference appropriate procedures from their PSA-mandated manuals for operations, maintenance, and emergencies into the OPA-mandated facility response plans.

In 2012, Congress directed PHMSA to maintain copies of the most recent response plans and provide copies of the plans upon written request to interested parties, although PHMSA can withhold or redact information for security reasons.

States may impose additional requirements for facility response plans under the OPA as long as the requirements are at least as stringent as the federal standards. Several states—notably Washington and Alaska—have developed spill response requirements mandating public participation. Washington requires a range of response plans, from contingency plans for facilities, pipelines, and vessels, to geographic response plans for regions. All of these plans require a 30-day public comment period. Additionally, geographic response plans are reviewed periodically in public workshops, and the public may submit comments. The Puget Sound Partnership works with a broad range of stakeholder groups and makes annual recommendations to the legislature regarding spill response plans. Alaska uses a similar model, and the state has tasked Regional Citizens' Advisory Councils with developing broad-based plans to accelerate spill response efforts and build regional consensus.

## Shortcomings of current PHMSA Spill Response Planning

The Plains Justice report points out a variety of concerns with the PHMSA regulations governing spill response planning, and in the full report goes into great detail comparing the Coast Guard, EPA and PHMSA regulations, concluding that the other federal agencies provided regulatory standards giving “meaningful detailed standards for evaluation” of the submitted plans, and the PHMSA regulations do not. The PHMSA website indicates essentially the same conclusion in offering an explanation as to why operators may have had difficulty in developing initial spill response plans under the OPA that could obtain approval :

*“Unlike the other OPA 90 regulations developed by other federal agencies with responsibility for carrying out the statutory provisions of OPA 90, 49 CFR 194 has a less prescriptive and more generalized regulatory requirements.” PHMSA website, [here](#).*

In a field where operators must create multiple plans that are reviewed by separate agencies, and when some agencies have identified specific standards for adequacy of these plans, have entered agreements as to the protocols for reviewing plans so that there is consistency across the agencies, wouldn't it benefit the PHMSA staff responsible for plan review and the operator staff responsible for preparing these plans to have meaningful detailed standards for evaluation?

Unlike on other topics, where the PHMSA website contains a wealth of information available to the public, on the topic of oil spill response planning under OPA, the PHMSA website is nearly useless on this topic beyond providing access to the regulations. There is no readily apparent information about the protocols used to review spill plans, no information about whether there are plan review protocol agreements with other agencies, no current information about tabletop planning exercises planned or completed, no information about how the location or operators for those exercises are chosen, no information about the status of response plan approvals or rejections by state or by operator, no information about which states have enacted oil spill response planning requirements, no information on the protocols PHMSA uses to review and approve or reject plans. There is a summary of a 1999 review of the OPS process for approving spill response plans, but nothing more recent to indicate whether any changes have occurred.

Given the level of public debate about North American oil pipelines that has been going on for a couple of years, it is well past time that PHMSA undertake to vastly improve this part of its website.

In years past it has been difficult at best for the public to obtain copies of the facility response plans from PHMSA. Perhaps with the requirement in the new reauthorization bill to make spill plans publicly available, the agency will take the opportunity to re-create this piece of its site, with electronic access to approved spill plans, along with other information of importance to the public.

The Trust has recently submitted a request for a few response plans to see how PHMSA intends to implement this new provision. The agency response thus far has been a letter informing us that it will likely be “several months” before our request can be fulfilled because of Congressional and other public requests in line ahead of us.

### **Here's what a spill response plan looks like**

PHMSA has posted a redacted (edited) version of the Exxon response plan for their operations in Montana, including the Silvertip line that crosses the Yellowstone River. You can download that plan [here](#). Take a quick look at the plan and see what you think after learning about the regulatory requirements.