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Re: Comments on PHMSA's Draft Study on Automatic and Remotely Controlled Valves

Automatic shutoff valves (ASVs) or remotely controlled valves (RCVs), often referred to as emergency flow restriction devices (EFRDs), can in certain circumstances limit the volume of a pipeline release. However, the draft study prepared by Oak Ridge National Laboratories (ORNL) for PHMSA does not show that it would be economically, technically and operationally feasible to require installation of EFRDs on all newly constructed or fully replaced pipelines. The study's modeling does not reflect real world scenarios pipeline operators encounter in the field, overstates the positive benefits of EFRD use, and does not fully consider the drawbacks of EFRDs. PHMSA should conclude the study lacks evidence in support of a one-size-fits-all EFRD mandate. The use of EFRDs in situations where they would not significantly reduce the impact of a release would divert limited safety funds from reducing higher risks to public safety and the environment.

In general, API and AOPL take no issue with several of the high level conclusions presented in the study:

- EFRD's can provide benefit and should be considered by operators when constructing or fully replacing pipelines;
- EFRD's can mitigate the consequences of pipeline failures under certain conditions;
- The use of EFRD's should be studied on a case by case basis; and
- Location and swiftness of closure of EFRD's are the most important factors to limit damage from pipeline releases.

However, the placement of EFRDs, the speed with which they arrest flow, the profile of the pipeline system, the type of commodity moved in the pipeline, and numerous other factors influence the choice of whether to utilize EFRDs. Additionally, EFRDs are only effective after a release has been detected and recognized, making other safety systems and technologies more important to reduce many release scenarios and thus a better safety investment.

An example of the limited benefit of EFRDs is one of the very case studies ORNL examined. Delay in operator control room management actions and emergency response

identification during the release were the main drivers of the size of the 2010 Kalamazoo River spill. Most all of the crude was spilled before the operator determined a release and shut down the line. The ORNL study does not conduct this root cause analysis to determine whether EFRDs would have made a beneficial difference.

Additionally, ORNL's improper assumptions overstate the benefits of EFRDs by failing to reflect how EFRDs operate in practice. ORNL improperly assumed a constant flow rate during the valve closure phase. Flow rate can be assumed constant through the detection and continued pumping phases, but not through the valve closure phase. When the pumps shut down soon after leak detection no new volumes enter the pipeline, the pressure source is gone and volumes slow down throughout the drain down phase. Therefore the calculated Shutoff Valve Closure volumes based on a constant flow volume during closure and included in the study by ORNL are highly inflated and do not accurately reflect a true spill volume. This overstatement of spill volumes also leads to excessively inflated estimated Damage Costs.

For example, the Kalamazoo spill released a total of 20,000 bbls, compared to an estimated 430,000 bbls from Case Study 8A (90 minute closure) in Table 3.32. Based on this, ORNL's model produced a spill volume 21.5 times the real-world volume. Had ORNL used an appreciable sample of real-world cases to validate the number of barrels predicted in their theoretical case studies, a much more realistic evaluation of economic feasibility could have been achieved.

ORNL's cost benefit analysis weighs the cost of adding closure capability against the benefit of avoiding a worst-case leak scenario. ORNL does not seem to have compared the relative efficacy of manual shutoff valves to RCVs or ASVs. This is not an accurate assessment of the risks and therefore overstates the relative benefits of EFRDs. PHMSA should be interested instead in the industry-wide cost of adding closure capabilities to all valves in newly constructed or fully replaced pipe compared to the benefit that would be realized by having closure capabilities on those same lines in the event of a leak. Benefits can be measured by extrapolating the historical frequency and severity of spills on newly constructed or fully replaced pipe.

The study should have also addressed the detriments of EFRDs. The valves pose a security threat to the pipeline since they are an above ground appurtenance connected to an underground transmission pipeline system. In many cases, they also require property ownership or easement in order to maintain accessibility, security, and maintenance; therefore, potentially limiting property use. EFRDs have also been prone to unintentional closures, potentially causing additional pipeline damage. Operationally, automatic operation is also problematic because in certain situations, an EFRD may be better left open in order to pull product away from a rupture location to minimize drain down volumes to the environment.

As indicated in our previous comments on the scope for the study, while coordination of operators and emergency responders is imperative, we do not think that is a primary consideration in the selection and placement of EFRD's and should not be included in the final study.

Under current regulations and best industry practices, hazardous liquids pipeline operators already consider the use of EFRDs appropriately. The selection and placement of EFRD's should be a risk-based decision that balances the likelihood of a release with the potential public safety and environmental consequences that would derive from a potential release. That analysis should include the increased risk of installing EFRDs. While EFRDs will remain an important tool to mitigate potential consequences of a catastrophic release in certain locations, prioritizing resources to better prevent and detect potential causes of releases and addressing those causes before releases occur is a more effective use of resources than requiring significant additional use of EFRDs through prescriptive regulation.

Sincerely,

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