

State of Washington
Joint Legislative Audit and Review Committee (JLARC)



Follow-up: 2003 Oversight
and Review of Washington's
Pipeline Safety Office

Report 04-8

June 16, 2004

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The Joint Legislative Audit and Review Committee (JLARC) carries out oversight, review, and evaluation of state-funded programs and activities on behalf of the Legislature and the citizens of Washington State. This joint, bipartisan committee consists of eight senators and eight representatives, equally divided between the two major political parties. Its statutory authority is established in RCW 44.28.

JLARC staff, under the direction of the Committee and the Legislative Auditor, conduct performance audits, program evaluations, sunset reviews, and other policy and fiscal studies. These studies assess the efficiency and effectiveness of agency operations, impacts and outcomes of state programs, and levels of compliance with legislative direction and intent. The Committee makes recommendations to improve state government performance and to correct problems it identifies. The Committee also follows up on these recommendations to determine how they have been implemented. JLARC has, in recent years, received national recognition for a number of its major studies.

**FOLLOW-UP: 2003
OVERSIGHT AND
REVIEW OF
WASHINGTON'S
PIPELINE SAFETY
OFFICE**

REPORT 04-8

JUNE 16, 2004



STATE OF WASHINGTON

JOINT LEGISLATIVE AUDIT AND
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Overview

The Joint Legislative Audit and Review Committee (JLARC) made **four recommendations** in its June 2003 Oversight and Review of Washington's Pipeline Safety Office for improving the pipeline safety program of the Washington State Utilities and Transportation Commission (WUTC):

- 1) Focus on risk;
- 2) Identify and integrate best practices;
- 3) Integrate mapping system with related Geographic Information System (GIS) efforts; and
- 4) Align fees and workload.

Our review of the WUTC's letter of March 17, 2004 (Appendix 2), suggests that the WUTC has made progress in each area and has plans for additional improvements. They also acknowledge that the challenge before them is difficult and complex and that they are still in a learning mode.

While these actions to date fall short of fully implementing JLARC's June 2003 recommendations, the WUTC has made some progress in addressing JLARC's concerns.

Focus on Risk

WUTC describes five steps they have taken to focus on risk, as well as their plan for three additional activities. Each of the five steps has merit, but some are clearly better than others at reducing risk.

- 1) WUTC notes that **excavation is a leading cause of pipeline damage**. A Northwest Regional Common Ground Alliance has been established to determine how *best practices* (WUTC emphasis) could be implemented in the Northwest. This is clearly a strategic action, focused on reducing a leading risk.
- 2) Due to concern about their legal standing to **conduct inspections of master meters**, WUTC had previously halted their oversight of master meters. In the winter of 2003, they considered seeking legislation clarifying their authority to conduct inspections. Apparently, they have concluded that a technical assistance approach is a better risk-reduction approach. It is unclear how technical assistance is better at reducing risk than conducting actual inspections.

- 3) WUTC has secured grant monies for **additional first responder training**. Additional funding for first responders is a good idea, though this is not itself a risk reduction activity. It is unclear whether the additional training will include information on best practices that have been identified elsewhere.
- 4) WUTC has adopted new **gas safety rules**. These gas safety rules have been under development for several years, driven by state statute. The measures governing intra-state pipelines will be more stringent than those for interstate pipelines. It is likely that the measures cited (increased patrolling, construction specifications, and leak detection) will help to reduce risk.
- 5) WUTC has assessed how **other states** and the federal Office of Pipeline Safety (OPS) incorporate risk and conclude that the WUTC is in line with other state offices in identifying risk factors. They use these factors to establish inspection frequency. This is a standard technique and over the years has often been cited by WUTC.

WUTC also sketched out several future steps for better understanding and managing the risk of pipeline failure including research on how others have managed risk. Risk assessment training for pipeline safety staff and hosting a conference on risk management which invites stakeholder discussion and experience are mentioned. These steps would all seem to hold significant promise for risk reduction.

Identify and Integrate Best Practices

WUTC mentions four items as responses to the JLARC recommendations:

- 1) Providing additional information and **technical support to local governments** on a number of specific problem areas. Doubtless this assistance has value. However, it has little to do with identifying and integrating best practices into WUTC's operations;
- 2) Developing a **damage prevention best practices** approach for the Northwest Regional Common Ground Alliance, which is in line with the JLARC recommendation;
- 3) **Increasing participation** in the National Association of Pipeline Safety Representatives (NAPSR). Historically, NAPSR has dealt primarily with budget and grant issues, as well as state-federal authority questions concerning OPS. WUTC identifies a particular conference that was useful in identifying best practices, enhancing communication, and learning about new initiatives from OPS; and
- 4) Going **beyond basic training requirements** recommended by OPS for their inspectors.

JLARC's recommendation to identify and integrate best practices encouraged WUTC to develop a better means of getting input from the regulated pipeline community to sharpen its inspection performance and to consider performance-based management. Other than the attention to excavation damage, it is not apparent that these two suggestions have been addressed. In their initial comments on the JLARC study, WUTC alluded to the development of additional performance measures. It is not clear how WUTC is actually using performance management to assist with its decision-making.

Integrate WUTC Mapping with Other GIS Efforts

WUTC discusses the continued development of its Geographic Information System, in the context of emergency response. They note the substantial differences among local governments in GIS capacity. Accordingly, they are prepared to share data with some jurisdictions and provide hard copy maps to others.

WUTC notes that the next phase in the project is to meet with local government officials, describe the GIS services and data that they could provide, and get feedback on what best meets local needs. WUTC had earlier noted that they intended to increase the number of staff devoted to GIS activities, so it is unclear why they have not made more progress in this area.

WUTC notes that they have not yet begun to articulate additional benefits from a mapping system (other than emergency response). For example, the mapping might help with inspections, or with land use siting choices, or even with damage prevention. They do not indicate when or whether they will explore other uses to capitalize on the management and planning potential of GIS.

Align Fees and Workload

JLARC recommended that the agency adjust future fee calculations to mirror actual staff time devoted to intrastate and interstate work and to recalculate the average daily inspector costs. We believe that WUTC has fully implemented this recommendation. JLARC and WUTC disagreed about how to calculate the actual staff time; however, WUTC's methodology is certainly defensible.

Summary

WUTC has taken a number of actions in the last year to improve their pipeline safety efforts. Several of these actions were responses to the JLARC report and its recommendations.

WUTC proposed additional activities holding the most promise for improving the program are:

- Taking the "next steps:" research how other regulators have managed risk; provide risk assessment training to inspectors; seek input from the broader community;
- Articulating and using a risk reduction strategy;
- Incorporating some of the risk reduction approaches recommended by the Accufacts report;¹
- Developing and using performance measures to assist with program decision-making;

¹ As part of the 2003 oversight and review of Washington's Pipeline Safety Office, JLARC hired a consulting firm to assess how the regulatory system might be used to avoid future accidents. Richard Kuprewicz, of Accufacts, Inc., reviewed the Bellingham accident of June 1999 and another near Chalk Point, Maryland in April 2000. A copy of Accufacts' report, "Preventing Pipeline Failure," December 30, 2002, is available from JLARC upon request.

- Developing a coherent and consistent enforcement policy; and
- Identifying other benefits from the mapping system and incorporating them into their overall pipeline oversight program.

Cindi Yates
Legislative Auditor

On June 16, 2004, this report was approved for distribution by the Joint Legislative Audit and Review Committee.

Senator Jim Horn
Chair

APPENDIX 1 – 2003 OVERSIGHT AND REVIEW OF WASHINGTON’S PIPELINE SAFETY OFFICE – EXECUTIVE SUMMARY

OVERSIGHT AND REVIEW OF WASHINGTON’S PIPELINE SAFETY OFFICE

REPORT 03-5



REPORT DIGEST

JUNE 19, 2003

STATE OF WASHINGTON

JOINT LEGISLATIVE AUDIT AND REVIEW COMMITTEE

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Tom Sykes

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BACKGROUND

The Washington Utilities and Transportation Commission (WUTC) houses a division of pipeline safety which inspects natural gas and hazardous liquid pipelines. Following a fatal pipeline accident in Bellingham in June 1999 and based on direction from the 2000 and 2001 Legislatures, the WUTC increased its program staffing, added new inspectors, and expanded its inspection processes. The Legislature also directed the Joint Legislative Audit and Review Committee to review the newly expanded program in its 2001 legislation (ESSB 5182).

For this review, JLARC staff interviewed pipeline operators, other delegated states, federal pipeline safety staff, and WUTC management and staff. We also reviewed program and financial files and contracted with three private firms with expertise in pipelines and geographic information systems for additional analyses.

A Very Dynamic Period

The WUTC has had authority to conduct intrastate (within state boundaries) natural gas inspections since 1955 and intrastate hazardous liquid inspections since 1996. The program expansion to interstate (across state lines) pipeline inspection in 2000 has resulted in a more intense inspection effort, a higher regulatory profile, and a program that is still evolving.

The world of pipeline safety is undergoing significant changes across the country: new federal rules to increase inspections, multiple program audits by the General Accounting Office, and a newly-developed, risk-based approach to conducting inspections.* The WUTC is now operating a larger program with increased responsibility and changing inspection approaches.

Other State Pipeline Safety Programs

Our assessment of pipeline safety programs across the United States shows there is no programmatic model that can guide an assessment of the WUTC’s program. These programs vary greatly among the states, making interstate comparisons difficult. Moreover, no established interstate mechanism assembles or shares best regulatory practices.

General Findings

This review focused on three primary activities of the WUTC’s pipeline safety program: inspecting pipelines, mapping pipelines, and imposing a fee on operators.

* In accordance with federal requirements, an inspection typically involves the methodical review of company records to ascertain if they are current and comport with federal codes. New inspection protocols may include more intensive physical inspection than what now exists.

Inspections

The WUTC has established the initial stages of a more complex pipeline regulatory program; hired experienced and quality staff; accelerated staff training; improved program planning, and developed a comprehensive record system and databases. Completed inspections are at an historic high, and those inspections are more thorough and intense. WUTC is completing inspections more quickly than their initial projections and anticipates inspecting some companies less frequently. This could lead to the need for fewer inspectors for traditional inspections. However, new inspection protocols from the federal government are also in initial stages of development; and they will require additional inspection time.

Challenges for the WUTC will be to move beyond today's regulatory procedures and toward more risk-based management. The WUTC has not yet developed robust performance measures, nor has it developed a coherent and consistent enforcement policy. The nascent Integrity Management System can help the WUTC better manage risk, but additional lessons can be learned from Bellingham and the other accidents around the United States.

Mapping

The WUTC has made a good effort to assess their needs and the needs of "first responders," the local emergency personnel, to create a mapping system responsive to their multiple needs. In their planning efforts, however, the WUTC has not been sufficiently attentive to the larger community that already supports emergency responder readiness. That existing framework includes the State Fire Marshal, local Emergency Operation Centers, county and local GIS efforts, and the pipeline companies themselves, all of whom put some level of effort into maintaining GIS-based maps to support local emergency responses. Additionally, the WUTC has not clearly articulated how their mapping efforts fit with its pipeline inspection function.

Regulatory Fees

The WUTC has created fee rules that are congruent with statutory language and that fairly allocate inspection program costs. However, one calculation in the current fee methodology is based upon an estimate of staff time that has proven to be inaccurate. This projection has led to a disproportionate shift of costs from one group of pipeline operators (the intrastate companies) to another (the interstate companies). We found that interstate companies are paying more than their proportional share of the inspection program costs. In addition, the fee methodology uses an estimated daily cost of an inspector's time that is significantly less than the actual cost. This miscalculation, too, has created discrepancies in the fees paid by operators.

RECOMMENDATIONS

Based on JLARC's general findings and conclusions of this study, we make the following four recommendations:

Recommendation 1: Focus on Risk. The WUTC's pipeline safety program should develop a strategy to reduce the risks of pipeline accidents that will define risk, explain current risk reduction efforts, and identify new risk reduction strategies.

Recommendation 2: Identify and Integrate Best Practices. WUTC should identify and adopt best inspection and safety management practices through greater interaction with pipeline operators and the national pipeline safety community.

Recommendation 3: Integrate Mapping System with Other GIS Efforts. WUTC should plan its GIS system within the context of the existing emergency response infrastructure and articulate additional benefits to be gained with the WUTC's mapping system.

Recommendation 4: Align Costs and Workload. WUTC should base its fee methodology on actual staff time spent on inspections and revise the daily costs of an inspector's time to reflect actual practice.

APPENDIX 2 – WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION REPORT



RECEIVED

MAR 19 2004

STATE OF WASHINGTON

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

1300 S. Evergreen Park Dr. S.W., P.O. Box 47250 • Olympia, Washington 98504-7250
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March 17, 2004

Thomas M. Sykes, Legislative Auditor
Washington State Joint Legislative Audit and Review Committee
506 16th Avenue S.E.
Olympia, Washington 98501

Dear Mr. Sykes:

Subject: WUTC Update on JLARC'S Recommendations

As requested by the Washington State Joint Legislative Audit and Review Committee (JLARC), the Washington Utilities and Transportation Commission (WUTC) submits this letter as an update to the implementation of the four recommendations made by JLARC in its June 2003 report of the WUTC pipeline safety program.

Recommendation #1

<p>Focus on risk. The WUTC's pipeline safety program should develop a strategy to reduce the risks of pipeline accidents that will define risk, explain current risk reduction efforts and identify new risk reduction strategies.</p>

The 2003 JLARC report recommended that the WUTC focus on reducing risk of pipeline accidents, meaning "... the probability of negative consequences occurring from the existence and operation of ... pipelines" [2003 Report on Washington's Pipeline Safety Office, page 15].

Recent risk reduction activities:

In line with that recommendation, we have taken the following steps to better manage risk:

- **Improved damage prevention practices.** In 1999, the federal Office of Pipeline Safety (OPS) determined that a leading cause of damage to pipelines was excavation damage. Consequently, this year we encouraged pipeline companies, utilities, contractors and excavators to establish the Northwest Regional Common Ground Alliance (NW-CGA), the purpose of which is to determine how "best practices" for damage prevention could

be implemented in the northwest. The WUTC also provided funds to facilitate the formation of the NW-CGA.

- *Technical assistance program for operators of master meters.* We instituted a technical assistance program for "master meter" operators. A master meter exists when multiple customers take service from a single gas meter. Maintaining the buried gas piping beyond the meter is the responsibility of the person or business that owns the meter – not the company that provides the gas. Most master meter operators are unaware that these facilities are not properly maintained, unless they take steps to do so.
- *Additional training for first responders.* The WUTC funded additional pipeline incident response training for first responders through a grant to the Office of the State Fire Marshal.
- *Gas safety rulemaking will result in stronger state rules.* The WUTC is reducing risk to pipelines by implementing state rules that are more stringent than those administered by OPS. Increased patrolling, construction specifications, and leak detection are only a few examples of the types of risk reduction standards for pipelines that are addressed within the WUTC's rules. It is important to remember, however, that Washington may not apply these rules to the high-pressure pipelines operated by interstate companies such as Williams Northwest Pipeline. These companies, because they carry materials interstate, are only subject to federal rules.
- *Incorporated risk into determining the frequency of inspections.* We researched how other states and the OPS incorporate risk. Each program has a unique way of prioritizing risk however, what we have learned is the WUTC is in line with other state pipeline safety offices in identifying the factors that contribute risk to pipelines. Once identified, we used these factors to establish an inspection frequency. This gives the WUTC Pipeline Safety Section a tool to focus on the most critical areas first with the resources that are available.

Next steps:

The OPS' approach to reducing risk has been to implement new regulations on integrity management and operator qualifications. The WUTC has been closely involved in both efforts as they have evolved and will continue to implement these programs in Washington. However, as suggested by Accufacts, these efforts, while they constitute a good start, may not be enough.

In addition we will continue the work described above: support of the NW-CGA, providing training to first responders, etc.

Finally, the balance of this year will see us continue our learning and research in this area. This is a challenging issue and one that has not been completely and successfully addressed in the area of pipeline safety. We have sketched out the following steps to better understand and manage risk of pipeline failures:

- *Research how other regulators and other states have managed risk.* We are exploring what we can learn from other government regulators, such as the Occupational Safety and Health Administration (OSHA), which took a different approach to reducing risk. OSHA's development of process safety management regulations changed the focus of inspections by looking at a company's management structure and decision-making processes, which in turn changed the way operators looked at their own systems.
- *Provide risk assessment training to pipeline safety staff.* We will organize and provide pipeline specific training for our staff from a loss management or risk assessment consultant.
- *Seek input from the broader community.* Later, we will hold a conference on risk management and invite stakeholder discussion on the definition of risk, and about successful strategies that have been used and whether and how the UTC could employ those.

The goal of each of these efforts is to determine a course of action that will best align risk assessment into our processes. It is important to remember that the WUTC is limited in its ability to forcibly change federal regulations for interstate operators, however, we are reviewing the potential for exploring this type of model program.

Recommendation #2

Identify and integrate best practices. WUTC should identify and adopt best inspection and safety management practices through greater interaction with pipeline operators and the national pipeline safety community.
--

In the last year we have taken the following steps in response to this recommendation:

- *Increased information sharing and technical support to local governments on pipeline safety.* Local governments are important, but often overlooked partners in ensuring pipeline safety. In the past year we worked hard to provide information and technical support to local governments. This has taken many forms such as providing technical support to the City County Consortium on Pipeline Safety, helping the city of Puyallup with its interactions with Williams Pipeline, working closely with the city of Bellevue,

Olympic Pipeline, and Seattle/King County METRO on a difficult technical problem along Kamber Road in Bellevue that might have affected the integrity of Olympic's pipeline.

- **Support of damage prevention "best practices."** As described above, we encouraged stakeholders to establish the Northwest Regional Common Ground Alliance (NW-CGA), the purpose of which is to determine how "best practices" for damage prevention can be implemented in the northwest.
- **Increased our participation in the national in the National Association of Pipeline Safety Representatives (NAPSR).** NAPSR is comprised of the state pipeline safety program managers from across the country. It works closely with the OPS to improve pipeline safety regulations and inspection practices. For example, the WUTC recently participated in the OPS sponsored interstate agent summit in Alexandria, Virginia. State agencies met to discuss ways to enhance communication, learn about current initiative through the federal Office of Pipeline Safety, and to discuss proposals that identify best practices and consistent approaches for pipeline inspections.
- **Providing technical training beyond that recommended by the OPS.** Our engineers receive training beyond what OPS requires for certification in the program. We have an ongoing training and technical improvement program that reinforces the best inspection methods. Each inspector is trained in inspection methods, internal inspection, fracture mechanics and certified in specialty areas such as welding inspection and corrosion control.

Recommendation #3

Integrate WUTC mapping system with other GIS efforts. WUTC should plan its GIS system within the context of the existing emergency response infrastructure and articulate additional benefits to be gained with the WUTC's mapping system.

Work on our pipeline GIS and this recommendation is ongoing.

Plan WUTC GIS in the context of existing emergency response infrastructure:

In the past year we have made significant progress implementing our GIS plan. We have acquired and installed the needed hardware and software, established and documented data standards, and acquired nearly all the needed data.

We have also further researched the "existing emergency response infrastructure." One thing we have learned, not surprisingly, is that there are both GIS "haves" and "have nots."

For example, our review of Pierce County revealed that Tacoma and Pierce County have a GIS system that allows for digital input of pipeline data. However, many other communities and fire districts in Pierce County do not have GIS systems. For example, cities of Graham, Bonney Lake, Eatonville, do not have such a system.

The conclusion we have drawn is that we need to be prepared to provide pipeline GIS products in the manner that meets the needs of each jurisdiction. In some instances this will mean sharing data, for others it will mean providing hard copy maps.

The next phase in our project is to meet this spring with local government and emergency response officials throughout the state to describe the GIS services / data we could provide and get their feedback on which best meet their needs. After these meetings we will know which products are needed and we will begin providing those to local governments and emergency first responders.

While this work is ongoing, we have begun providing pipeline GIS data and services to interested parties. We have provided digital and/or hard copy pipeline information to the cities of Sedro Woolley, Tacoma, and Puyallup and data to Pierce, Cowlitz, Mason, and Snohomish Counties. We have responded to requests from the U.S. Department of Commerce, Washington State Department of Transportation, Washington Military Department (EMD), and state legislators. We have also assisted McChord Pipeline, Tidewater, and Georgia Pacific with their GIS needs. These operators do not currently have GIS capability.

Articulate additional benefits to be gained with the WUTC's mapping system:

This work has not yet begun.

Statutory background:

The WUTC is developing a pipeline GIS as mandated by RCW 81.88.080, which directed us to "provide ... maps of ... pipeline[s] ... sufficient to meet the needs of first responders ... and assist local governments in obtaining hazardous liquid and gas pipeline location information and maps." This GIS is to be operational by the end of 2005.

Recommendation #4
Align fees and workload. WUTC should base its fee methodology on actual staff time spent on inspections and revise the daily costs of inspector's time to reflect actual practice.

We have accomplished this recommendation.

In June 2003 when we established our pipeline safety fees for fiscal year 2004, we did so using staff time data for the previous twelve months. Fees for earlier years had been set using estimates for a number of key items because our program database had not been in use long enough to collect a complete year of data for fee purposes.

As part of setting the fee, we conducted an analysis to derive the time spent on the various inspection activities, which provided us with the basis to re-evaluate the inspection staffing level, and the proportional allocation between interstate and intrastate pipeline companies. The analysis resulted in a reduction of expense allocation to interstate companies from 41.7 percent to 37 percent and an increase in expense allocation for intrastate companies from 58.3 percent to 63 percent.

In addition, the updated Pipeline Safety Inspection Database provided the specific detailed information required to complete the OPS Federal Certification. Based on the OPS Federal Certification, the WUTC pipeline safety program evaluation resulted in a score of 99 percent. This score establishes the amount of Federal reimbursement that a program is eligible to receive. Therefore, the WUTC Pipeline Safety Inspection program for this current year appears to be eligible for increased OPS reimbursement. Federal reimbursement is directly applied against the program cost. The variance between total program cost and federal reimbursement must be collected from pipeline safety fees.

Conclusion:

We have made significant progress on the items identified by the Committee, while continuing to meet our public safety obligations. If you would like additional information or have questions about the information we have included in this letter, please contact Alan Rathbun, Director of our Pipeline Safety Office at (360) 664-1254.

Sincerely,



Carole J. Washburn
Executive Director

cc. Carol Jolly, Office of Financial Management