Subject Matter Study Report

**Title 49 Chapter 601 of the United States Code**

**Pipeline Safety**

June 2018 Revised October 2019

By

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**Title 49 Chapter 601 of the United States Code**

**Pipeline Safety**

**Executive Summary**

There are significant differences between the pipeline safety regulations, 49 CFR 190-195, and the pipeline safety laws, 49 USC Chapter 601. The differences are mainly due to the failures of the U.S. DOT to comply with pipeline safety acts passed in:

1. 1968,
2. 1979,
3. 1988,
4. 1992,
5. 1996,
6. 2002,
7. 2006, and
8. 2011.

Areas of non-compliance by the U.S. DOT in Title 49 Chapter 601 include:

1. Including clear criteria for interstate natural gas pipelines and interstate transportation of natural gas.
2. Gathering line determination.
3. Failure to issue compliance standards within the regulations.
4. Failure to gather and analyze information and data on causes of incidents and accidents to support present and future regulatory actions.
5. Failure to consider the secondary effects of additional pipeline safety activities to support the economy. U.S. DOT only considers the direct costs to the pipeline industry.
6. The U.S. DOT has failed to issue pipeline safety standards, because the regulations are so vague in most cases. This vagueness allows the pipeline companies in many cases to determine what constitutes adequate compliance.
7. The U.S. DOT has failed to incorporate by reference many industry standards that could significantly improve compliance activities of pipeline companies.
8. The U.S. DOT has failed to gather and evaluate considerable amounts of data on pipeline incidents and accidents to support the need for new regulatory action. Failure to do so has made the U.S. DOT totally dependent on the pipeline industry on cost and benefit studies.
9. The U.S. DOT has failed to require that risk assessments by pipeline companies be based on overall cost to society and probable reductions in incidents on accident frequency and/or severity. The U.S. DOT allows pipelines to use unsupported guesswork for risk analysis and risk ranking.
10. The U.S. DOT continues to follow unnecessary, inefficient, and lengthy rulemaking procedures even if such activities are not required. This practice delays many needed safety initiatives, because of the Office of Pipeline Safety limited staff and consultants.
11. Title 49 Parts 191 and 195 do not address all conditions that are a hazard to life, property, or the environment, such as mechanical damage, ILI anomalies, and general corrosion.
12. Title 49 Parts 191 and 195 do not address all conditions that cause or have caused a significant change or restriction in operation of a facility.
13. U.S. DOT has failed to remove all the regulatory exceptions on low-stress hazardous liquid pipelines.
14. U.S. DOT has failed to incorporate numerous industry publications as standards in 49 CFR Parts 192 and 195.
15. U.S. DOT has failed to require appropriate statistical analysis of direct assessment data and in-line inspection data. Without proper statistical data, misuse of direct assessment and ILI data creates a significant risk factor.
16. The U.S. DOT has failed to completely comply with the NTSB recommendations on pipeline central control operations.
17. The U.S. DOT has failed to require continued compliance with regulatory requirements that are outside the scope of new pipeline safety regulations covering design, installation, construction, initial inspection, or initial testing of existing pipelines.
18. The U.S. DOT continues to not have comprehensive programs on the qualification of states to enforce Federal regulations.
19. The U.S. DOT has failed to issue regulatory requirements on inspection and maintenance plans for each pipeline facility.
20. The U.S. DOT has failed to ensure that each operator of cast iron gas pipeline facilities continue to replace cast iron piping, because 99+ of the gas distribution are allowed to be classified as intrastate by the pipeline operators. The U.S. DOT has little activity on gas distribution safety issues.
21. Stated risk analysis requirements are based on “the risk to each facility” and not the risk to public health and safety, property, and the environment.
22. The U.S. DOT failed to issue specific and detailed requirements on how risk analysis are to be performed. The regulations allow guesswork to be used in lieu of proper risk analysis.
23. The U.S. DOT failed to issue specific regulatory standards on leak detection and use of emergency flow restricting devices.
24. The U.S. DOT has failed to issue regulations requiring an operator to adopt and follow an integrity management program in areas not required by regulations in high consequence areas.
25. The U.S. DOT failed to require that operating and maintenance procedures and plans be submitted for review and approval.
26. On pipeline facilities hazardous to life and property, the U.S. DOT did not incorporate the requirements into 49 CFR Parts 192 and 195. Requirements were placed in 49 CFR Part 190 under corrective action orders. Therefore, the issue will only become effective after incidents and accidents occur as corrective action and not preventive and proactive in nature.
27. The placement of a customer’s meter is usually determined by the gas distribution company. Placement of a meter near a main exposes the meter to vehicular damage. Gas distribution companies should own the service line up to the customer’s first building. Most customers are not qualified to cover the operation, corrosion control, mechanical damage prevention, and emergency response on a service line.
28. Risk management of pipelines is unrealistic, because pipelines vary extensively in age, diameter, coatings, corrosiveness of the ground, operating practices, and maintenance practice. Risk management requires a high degree of knowledge on factors that inference the probability that a pipeline facility will fail. Bad idea.
29. The U.S. DOT has failed to accept the reality that much of the pipeline related encroachments are made by pipelines on existing populated areas.
30. The U.S. DOT failed to require that pipeline operators submit pipeline operator qualification program for review and approval.
31. The U.S. DOT has failed to issue regulations on the time to repair pipelines.

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**Pipeline Safety**

**Introduction**

There are significant differences between the pipeline safety regulations, 49 CFR 190-195, and the pipeline safety laws, 49 USC Chapter 601. The differences are mainly due to the failures of the U.S. DOT to comply with pipeline safety acts passed in:

1. 1968,
2. 1979,
3. 1988,
4. 1992,
5. 1996,
6. 2002,
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**Definitions in 49 USC Chapter 601**

Definitions in Section 60101(a) 49 USC Chapter 601 include:

1. **Risk management** means the systematic application, by the owner or operator of management policies, procedures, finite resources, and practices to the tasks of identifying, analyzing, assessing, reducing, and controlling risk in order to protect employees, the general public, the environment, and pipeline facilities.
2. **Risk management plan** means a management plan utilized by a gas or hazardous liquid pipeline facility owner or operator that encompasses risk management.
3. **Interstate gas pipeline facility** means a gas pipeline facility used to transport natural gas and is subject to the Natural Gas Act.
4. **Interstate hazardous liquid pipeline facility** means a hazardous liquid pipeline facility used to transport hazardous liquid in interstate or foreign commerce.
5. **Interstate or foreign commerce related to gas** means commerce:
	1. Between a place in a State and a place outside that State, or
	2. Affects any commerce between a place in a State and a place outside that State.
6. **Interstate or foreign commerce related to hazardous commerce related to hazardous liquid** means commerce between:
	1. A place in a State and a place outside that State, or
	2. Places in the same State through a place outside the State.
7. **Interstate gas pipeline facility** means a gas pipeline facility and transportation of gas within a State not subject to the jurisdiction of FERC under the National Gas Act.
8. **Intrastate hazardous liquid pipeline facility** means a hazardous liquid pipeline facility that is not an interstate hazardous liquid pipeline facility.
9. **Gas pipeline facility** includes a pipeline, a ROW, a facility, a building, or equipment used in transporting gas or treating gas during its transportation.
10. **Transporting gas**:
	1. Means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas, in interstate or foreign commerce, but
	2. Does not include the gathering of gas other than gathering through regulated gathering lines in those rural locations that are located outside the limits of any incorporated or unincorporated city, town, or village, or any other designated residential or commercial area (including a subdivision, business, shopping area, or community development) or any similar populated area that is determined to be a non-rural area, except the term “transporting gas” includes the movement of gas through regulated gathering lines.
11. **Transporting hazardous liquid:**
	1. Means the movement of hazardous liquid by pipeline, or the storage of hazardous liquid incidental to the movement of hazardous liquid by pipeline, in or affecting interstate or foreign commerce, but
	2. Does not include moving hazardous liquid through:
		1. Gathering lines in rural areas;
		2. Onshore production, refining, or manufacturing facilities; or
		3. Storage or in-plant piping systems associated with onshore production, refining, or manufacturing facilities.

Additional specific and comprehensive definitions are needed on:

1. Gathering of gas;
2. Distribution of gas;
3. Gas production facility;
4. Hazards;
5. Hazardous facility;
6. Controlling risk;
7. Treating gas;
8. Production line;
9. Commerce;
10. Rural area;
11. Storage;
12. Adequate protection;
13. Risk;
14. Qualified;
15. Operator;
16. Production;
17. Practice;
18. Relevant;
19. Regulated,
20. Reasonable;
21. Reasonably identifiable;
22. Negotiated rulemaking;
23. Estimated benefits;
24. Appropriateness;
25. Benefits;
26. Regulatory options;
27. Non-regulatory options;
28. Reasoned determination;
29. Hazardous liquid;
30. Composition of the transported gas;
31. Unusually sensitive to environmental damage;
32. Functional characteristics;
33. Operational characteristics;
34. Adequate protection against risks;
35. Notice and public procedure;
36. Impractical, unnecessary, contrary to public interest;
37. Standard;
38. Voluntary consensus standards;
39. Openness;
40. Due process;
41. Balance of interest;
42. Consensus;
43. Appeals process;
44. Performance standards; and
45. Prescriptive standards.

**Gathering Line Regulations**

Section 60101(b)(1)(A) requires the U.S. DOT, not later than October 24, 1995, to prescribe standards defining the term “gathering line”. In defining gathering line for gas, the U.S. DOT:

1. Shall consider the functional and operational characteristics of the lines to be included in the definition be included in the definition of gathering line.
2. Shall not be bound by any classification of FERC under the Natural Gas Act.

Section 60101(b)(2)(A) requires the U.S. DOT shall not later than October 24, 1995 to prescribe standards for “regulated gathering line”. The U.S. DOT shall consider:

1. Location of the line,
2. Length of the line from the well site (not production sites),
3. Operating pressure,
4. Throughput of the line, and
5. Composition of the transported gas or hazardous liquid.

Section 60101(b)(2)(B) required the definition of “regulated gathering line for hazardous liquid service” shall not include:

1. Line diameters of 6 inches or less,
2. Lines operated at low pressure,
3. Lines located in a rural area that is not unusually sensitive to environmental damage.

The U.S. DOT has repeatedly failed since 1995 to comply with requirements to define the differences between production lines, gathering lines, and transmission lines.

Comments on the above include:

1. The U.S. DOT has allowed the mid-stream pipeline companies to dictate the definitions and requirements for gas gathering lines.
2. Why doesn’t the U.S. DOT use the gathering line definitions in 49 CFR Part 195 as follows:
	1. **Gathering line** means a pipeline 8 5/8-inch or less nominal outside diameter that transports petroleum from a production facility.
	2. **Production facility** means piping or equipment used in the production, extraction, recovery, lifting, stabilizing, separation, or treatment of petroleum or carbon dioxide.

**Purpose and Applicability of 49 USC Chapter 601**

The purpose and applicability of 49 USC Chapter 601 includes:

1. Purpose of minimum pipeline safety standards is to:
	1. Provide adequate protection against risks to life and property posed by pipeline transportation and pipeline facilities and
	2. Improve the regulatory and enforcement authority of the U.S. DOT.
2. Applicability and scope of minimum pipeline safety standards include:
	1. Apply to owners and operators of pipeline facilities;
	2. Apply to the design, installation, inspection, emergency plans and procedures, testing, construction, extension, operation, replacement, and maintenance of pipeline facilities; and
	3. Require that all individuals who operate and maintain pipeline facilities be qualified to operate and maintain pipeline facilities.

Comments on the above include:

1. The words “minimum” and “adequate” do not belong in the same sentence. The terms are not consistent with one another.
2. The U.S. DOT has never attempted to aggressively enforce regulations and impose maximum penalties for non-compliance.
3. The cost of compliance is usually much more than the penalties for non-compliance, if the non-compliance acts are enforced.
4. Pipeline companies maximize their profits minimizing compliance activities.
5. Chapter 601 requires the scope of minimum safety standards apply to the design, installation, inspection, emergency plans and procedures, testing, construction, extension, operation, replacement, and maintenance of pipeline facilities.
	1. Corrosion control is excluded, but falls under maintenance.
	2. The term standard does not apply to pipeline safety regulations issued by the U.S. DOT, because the regulations are written in general, performance-based language that covers some activities to be performed, but not how to perform the activity.
	3. Title 49 CFR Parts 191, 192, and 195 contain hundreds of vaguely stated requirements that allow the pipeline operator to determine what constitutes compliance.
	4. Standardization involves prescriptive regulations that provide step-by-step, detailed instructions on how to comply with the requirements in the standard.
	5. ASME B31.8S requires the use of prescriptive standards when records are not complete, which is normally the case with older pipelines and some new pipelines.
	6. Grandfathering is not addressed in the above Chapter 601 requirements.
	7. Regulations on operator qualifications do not apply to all individuals who operate and maintain pipeline facilities. Supervisors, managers, technicians, and engineers are not included.
6. Supervisors of operating and maintenance activities should be required to be qualified.

**Practicability and Safety Needs of Standards**

Section 60102(b) covers practicalities and safety needs of standards including the following.

1. Each minimum pipeline safety standard under 49 USC Chapter 601 shall be:
	1. Practical and
	2. Designed to meet the need for:
		1. Gas pipeline safety or safely transporting hazardous liquids and
		2. Protecting the environment.
2. Factors to be considered on the development of new standards include:
	1. Relevant pipeline safety information;
	2. Hazardous liquid pipeline safety information;
	3. Environmental information;
	4. Appropriateness of the standard for a particular type of pipeline transportation or facility;
	5. Reasonableness of the standard;
	6. Results of a risk assessment of the reasonable identifiable or estimated benefits expected to result from implementation or compliance with the standard;
	7. Comments and information received from the public; and
	8. Comments and recommendations of the Technical Pipeline Safety Standards Committee, the Technical Hazardous Liquid Pipeline Safety Standards Committee, or both, as appropriate.
3. Except where required by other USC Statute, the U.S. DOT shall propose or issue a standard under this chapter only upon a reasoned determination that the benefits of an intended new or changed standard justify its costs unless:
	1. The standard is the product of a negotiated rulemaking or other rulemaking including the adoption of industry standards that receive no significant adverse comment within 60 days of a Notice in the Federal Register.
	2. Based on a recommendation (in which ¾ of the voting members of the Technical Pipeline Safety Standards Committee concur).
	3. Pursuant to Section 553(b)(3)(B) of Title 5 of the United States Code (USC) that notice and public procedure are not required.
	4. Section 553(b)(3)(B) of Title 5 USC requires general notice of proposed rulemaking shall be published in the Federal Register unless the Federal Agency finds that, notice and public procedure are impractical, unnecessary, or contrary to the public interest.

Comments on the practicability and safety needs of pipeline safety standards include:

1. To date, the U.S. DOT has not published any criteria on practicability of pipeline safety standards. The concept of practicability of U.S. DOT pipeline safety standards should at least address the following considerations.
	1. Prescriptive or performance-based procedures for each task to be performed by field to headquarters pipeline employees.
	2. Records required and available for operating, maintenance, materials, design, construction, corrosion control, testing, and integrity management conditions.
	3. Technical knowhow of pipeline employees to perform complex evaluations.
	4. Effects of conservative assumptions and guesswork by pipeline operators.
2. Prior to the 1980s, pipelines had numerous skill classifications such as welders, welding inspectors, electricians, mechanics, and other skill based field jobs.
3. In the 1980s, these skill classifications were discontinued in an effort to reduce operating expense and jack-of-all-trade and master-of-none operator classifications were substituted for skilled classifications. The result of this activity was to reduce the skill and knowledge of field personnel.
4. Also in an effort to reduce costs, fewer engineers were maintained in operating and compliance positions. Experienced jacks-of-all-trades and master-of-none, became field and operations supervisors.
5. The net result of these changes in pipeline operator personnel have caused a dramatic decrease in the competency of pipeline personnel involved with pipeline safety compliance.
6. ASME B31.8 in Section 850.1 includes the following information and guidance on operating and maintenance procedures:
	1. Because of many variables, it is not possible to prescribe in a Code a detailed set of operating and maintenance procedures that will encompass all cases.
	2. It is possible, however, for each pipeline operating company to develop operating and maintenance procedures based on the provisions of this Code, its experience, and the knowledge of its facilities and conditions under which they are operated that will be adequate from the standpoint of public safety.
7. ASME B31.8 in Section 850 also requires each pipeline operator have an operating and maintenance plan that at least includes the following:
	1. Detailed instructions covering operating and maintenance procedures.
	2. Increased attention to those portions of gas pipeline facilities presenting the greatest hazard to the public in the event of an emergency or because of construction activity or extraordinary pipeline maintenance requirements.
	3. Written emergency response plan.
	4. Comply with the operating and maintenance plans.
	5. Provide comprehensive training for employees on the operator’s procedures established for their areas of responsibility.
	6. Keep records necessary to administer the plans and training properly.
	7. Monitor employee performance with operating and maintenance plans and review plans when necessary.
	8. Monitor employees performing operating and maintenance activities to determine when additional training is required for each employee.
8. Unfortunately, most pipeline operators apply a one-size-fits-all approach to pipeline safety plans and procedures that are grossly inadequate for pipeline safety.
9. Because 99+% of pipelines are buried and located on property not under the direct control of the pipeline operator, pipeline operating and maintenance have little “real time” information on the condition of pipelines when abnormal and emergency conditions are encountered.
10. Because of these many variables affecting operation and maintenance of pipelines, the “practicability” of pipeline safety standards is a non-existent issue.
11. The “practicability” issue can only be addressed in how each operator:
	1. Breaks down the operating and maintenance tasks,
	2. Provides comprehensive training and retraining of employees,
	3. Establishes skill and technical competency requirements for each operating and maintenance position,
	4. Establishes skill and technical competence requirements for each operating and maintenance supervisor, and
	5. Provides adequate operating and maintenance manpower to meet these stated requirements.

**Factors to Be Considered on New and Modified Safety Standards**

Factors to be considered by the U.S. DOT before regulations are deleted, modified, or added include:

1. Gas pipeline safety information,
2. Hazardous liquid pipeline safety information,
3. Environmental information,
4. Appropriateness of the standard for the particular type of pipeline transportation or facility,
5. Reasonableness of the standard,
6. The reasonably identifiable or estimated benefits expected due to the regulatory action,
7. The reasonably identifiable or estimated costs expected due to the regulatory action,
8. Comments and information received from the public, and
9. Comments and recommendations of the Technical Pipeline Safety Standards Committee and/or the Technical Hazardous Liquid Pipeline Safety Standards Committee.

Comments on factors to be considered on proposed regulatory actions include:

1. The U.S. DOT has never performed and issued a comprehensive report on the causes and contributing factors of pipeline incidents.
2. The gas pipeline industry has performed several studies on gas pipeline incidents.
3. The hazardous materials pipeline industry published one study in the 1980s through the American Petroleum Institute.
4. The U.S. DOT has not performed and issued a comprehensive study on the cost of various pipeline compliance activities.
5. Because of the lack of data in the possession of the U.S. DOT, the agency is dependent on the pipeline industry to provide pipeline safety information and data when a pipeline safety need arises.
6. Because of the wide range of pipeline operating and maintenance conditions, collected useable data on the cost of compliance activities would be a very complex and expensive process and would require considerable data from pipeline companies that does not normally exist.
7. The U.S. DOT has little environmental data other than drinking water and wild life classification areas by others.
8. The U.S. DOT does not consider the hazardous liquids transported inside gas gathering lines as an environmental issue. It’s not apparent that the U.S. DOT even knows of the existence of liquids in the gas gathering lines.
9. The issue on reasonableness of a standard has never been defined, but is under the control of the pipeline industry and apparently the U.S. DOT wants to keep pipeline safety issues simple, even when they are or can be complex. Over simplification results in:
	1. Deletion of needed data,
	2. Incomplete analysis,
	3. Underestimating the significance of the issue or potential safety problem, and
	4. Overlooking the existence of significant safety problems.
10. Estimated benefits and costs of a proposed regulatory action are under the control of the pipeline industry.
11. Little effort is given to obtain comments and information from the public. In general, the “public” has little relevant knowledge of the issues affecting regulatory action.
12. The U.S. DOT advisory committees are not fully comprised of people that are technically competent in pipeline safety matters.

**Risk Assessments to Be Performed**

Risk assessments are to be made on regulatory actions to address:

1. Identify regulatory and non-regulatory options in prescribing a proposed new standard.
2. Identify the costs and benefits associated with the standard.
3. Identify technical data and other information upon which the risk assessment information and the regulatory action is based.

Comments on the above include:

1. ASME B31.8 defines “risk” as “a measure of potential loss in terms of both the incident probability (likelihood) of occurrence and the magnitude of the consequences”.
2. The pipeline industry is the source of cost and benefit data and any technical data related to the proposed action.
3. The outcome of risk assessments is controlled by the pipeline industry.
4. The cost included in the cost benefit analysis are the costs to each affected pipeline operator.
5. The U.S. DOT fails to consider the trickle-down economic effects of regulatory actions that affect:
	1. Pipeline service companies,
	2. Pipeline service company employees,
	3. Expenditures by service companies to provide equipment needed for compliance,
	4. Expenditures by employees to support the cost of living, and
	5. Income and expenditures of various entities that support people’s lives such as grocery and clothing stores.
6. When the trickle-down effects on the entire economy or macro-economic effects, the net effect of regulatory actions are usually a negative cost or positive benefit to society of pipeline safety initiatives.

**Exceptions from Regulatory Action Procedures**

Exceptions from the extensive rulemaking procedures include:

1. Except where required by Statute, the U.S. DOT may issue a new pipeline standard upon a reasoned determination that the benefits of the new standard justify its cost.
2. The standard is the product of a negotiated rulemaking, or other rulemaking that receives no significant adverse comment within 60 days of notice in the Federal Register.
3. The U.S. DOT technical committee vote is at least ¾ in favor of the new standard.
4. Title 5 of Chapter 553(b)(3)(B) of the United States Code does not require notice and public procedures.

Title 5 of the U.S. Code Section 553(b)(3)(B) on rulemaking is stated as follows:

(b) General notice of proposed rulemaking shall be published in the Federal Register, unless the agency for good cause finds that notice and public procedure are impractical, unnecessary, or contrary to the public interest.

As indicated above, the U.S. DOT does not have to always engage in extensive and time consuming procedures to issue new standards, especially when Congress has passed requirements for safety initiatives. However, the U.S. DOT appears to be burdened with a “one-size-fits-all”, simplified approach to regulation action. The U.S. DOT also appears to be burdened with a self-imposed need to keep pipeline operators happy and receive their approval whenever new or revised regulations are issued. However, they are allowed to streamline the process.

Office of Management and Budget Circular No. A-119 (OMB A-119) was revised in February 1998 to establish policies on Federal use and development of voluntary consensus standards and on conformity assessment activities. Information and guidance provided in OMB A-119 included:

1. Goals on use of voluntary consensus standards included:
	1. Eliminate government cost of developing its own standards and decrease the burden of complying with government regulation,
	2. Provide incentives and opportunities to establish standards that serve national needs,
	3. Promote efficiency and economic competition through harmonization of standards, and
	4. Further reliance on the private sector to supply government needs.
2. The term “standard” or “technical standard” included:
	1. Common and repeated use of rules, conditions, guidelines or characteristics for products, processes, production methods, and related management systems practices.
	2. Additional definition and examples of standards include:
		1. Classifications of components;
		2. Delineation of procedures;
		3. Specification of dimensions, materials, performance, design, or operations;
		4. Measurement of quality or quantity in describing materials, processes, products, systems, services, or practices;
		5. Test methods and sampling procedures; and
		6. Description of fit and measurement of size or strength.
3. “Performance standard” is a standard as defined above that states the requirements in terms of required results with criteria for verifying compliance, but without stating the methods for achieving required results. A performance standard may define the functional requirements for the item, operational requirements, and/or interface and interchangeability characteristics.
4. A “prescriptive standard” may specify design requirements, such as materials to be used, how a requirement is to be achieved, or how an item is to be fabricated or constructed.
5. “Consensus” is defined as general agreement, but not necessary unanimity, and includes a process of attempting to resolve objections.
6. Voluntary consensus standards bodies must have the following attributes:
	1. Openness,
	2. Balance of interest,
	3. Due process,
	4. An appeals process, and
	5. Consensus.
7. Other types of standards not meeting the criteria for voluntary consensus standards are:
	1. Non consensus standards, industry standards, or “de facto” standards developed by the private sector without a full consensus process.
	2. Government-unique standards developed by the government for its own uses.
	3. Standards mandated by law.
8. This policy applies to all agencies and agency employees.
9. An agency may use voluntary consensus standards in its regulatory activities unless use of such standards would be inconsistent with applicable law or is otherwise impractical.
10. A standard can be used in whole or in part.
11. Impractical includes circumstances in which such use would fail to serve the agency’s programs needs, would be infeasible, inadequate, ineffectual, inefficient, or inconsistent with agency’s mission. Impractical includes standards which would impose more burdens, or would be less useful, than the use of another standard.
12. Agency should give preference to performance standards when such standards may reasonably be used in lieu of prescriptive standards.

Comments on the above include:

1. The U.S. DOT has done little on providing “incentive and opportunities” other than adopting regulations such as the PIR rule for defining high consequence area in 49 CFR Part 192.
2. The pipeline industry has been able to create their own opportunities for favorable regulations, but resisting the U.S. DOT initiatives.
3. For some unexplained reason, the U.S. DOT has failed to adopt numerous industry standards, recommended practices and guides that would improve safety to the public and the environment.
4. The U.S. DOT does not appear to have enough knowledge and ability to effectively follow OMB A-119.
5. Although the U.S. DOT has repeatedly indicated that 49 CFR Parts 192 and 195 are performance based regulations, neither document follows the OMB A-119 criteria as containing “performance standards”. Neither regulation nor standard states the required results with criteria for “verifying compliance”.
6. Organizations such as American Society of Mechanical Engineers, American Petroleum Institute, and American Gas Association do not exhibit the following attributes:
	1. Openness,
	2. Balance of interest,
	3. Due process, and
	4. An appeals process.
7. The organizations in item 6 above do make some helpful contributions toward pipeline safety and environmental protection, but the the content of documents are general and vague enough so no participating company experiences a high level of non-compliance.
8. The organizations listed in item 6 above do not publicize documents that receive substantial opposition within the organization due to high cost and fear of non-compliance.
9. The only organizations that prepare pipeline related standards are those listed in item 6 above that are supported only by the pipeline industry. They have a “so called” consensus process that is controlled by membership only by pipeline companies.
10. There is no independent organizational source of pipeline safety standards that equally supports pipeline safety and environmental safety. Such an organization would need to be supported by the Federal Government, not controlled by the pipeline industry such as those listed in item 6 above.

**Gas Pipeline Public Safety Program Mechanical Damage Prevention Requirements**

The U.S. DOT standards shall require that each operator of a gas pipeline facility participate in a public safety program to prevent mechanical damage to pipelines that:

1. Notifies the gas pipeline operator of proposed demolition, excavation, tunneling, or construction near or affecting the operator’s gas pipeline facilities.
2. Requires the gas pipeline operator to identify each facility that may be affected by any proposed demolition, excavation, tunneling, or construction to prevent damaging the facility.
3. Requires the U.S. DOT to approve each public safety program that ensures that the program will adequately protect each gas pipeline facility against a hazard caused by demotion, excavation, tunneling, or construction.
4. If a gas pipeline public safety program is not available, the U.S. DOT shall prescribe standards requiring an operator to take action to provide pipeline services that would be available under a public safety program.
5. The U.S. DOT may also prescribe standards requiring a hazardous liquid pipeline operator to participate in a public safety program meeting the requirements for a public safety program to prevent mechanical damage to the pipeline.

Comments on standards for a public safety program for mechanical damage prevention include:

1. Both 49 CFR Part 192 and 195 have pipeline damage prevention regulations, Section 192.614 in Part 192 for gas pipelines and Section 195.442 in Part 195 for hazardous liquids pipelines.
2. The only public safety program of the regulations is “one-call” program to make notice of excavation activities before they occur.
3. Neither 49 CFR Part 192 nor Part 195 have requirements covering the limits on mechanical damage when repair or pipe replacement is needed.

**Public Awareness Programs**

Standards shall be issued to require each pipeline operator to have a public awareness program, also known as a public education program.

1. Section 192.616 covers public awareness regulations in Part 192.
2. Section 195.440 covers public awareness regulations in Part 195.

Comments on the above include:

1. The above so called “regulatory requirements” were made/mue after the regulatory sections were adopted into the regulatory since the regulatory/regulator sections are already assigned.
2. The above statements are grossly inadequate in describing the requirements for public awareness programs.
3. The public awareness requirements should also be directed at the community level as covered in Pipelines and Informed Planning Alliance (PIPA) recommended practices.

**Safety Related Condition Reports**

Regulations shall be prescribed requiring each operator of a pipeline facility to submit a written report on any:

1. Condition that is a hazard to life, property, or the environment and
2. Condition that cause or has caused a significant change or restriction in operation of a pipeline facility.

Title 49 CFR Part 191 requires reporting of the following conditions:

1. General corrosion in a pipeline that operates at a hoop stress of 20% or more of SMYS that reduces the pipeline wall to less than required for the pipe’s MAOP.
2. Localized corrosion pitting to a degree where leakage might result.
3. Any material defect or physical damage that impairs the serviceability of a pipeline that operates at a hoop stress of 20% or more of SMYS.
4. Any condition that could lead to an imminent hazard and causes a 20% or more reduction in operating pressure or shutdown of a pipeline.
5. A report is not required if an incident results due to the condition or the condition is more than 220 yards from a building intended for human occupancy.
6. A report is not required if the condition is corrected by repair or replacement within the specified time period.

Title 49 CFR Part 195 requires reporting of the following conditions:

1. General corrosion that reduces the wall thickness less than required for the allowable MOP.
2. Localized corrosion pitting to a degree where leakage may result.
3. Unintended movement or abnormal loading of a pipeline by environmental causes, such as an earthquake, landslide, or flood that impairs its serviceability.
4. Any condition that causes the pipeline pressure to rise above 110 percent of its MOP. (Should be 10% above.)
5. Any leak in a pipeline that constitutes an emergency.
6. Any condition that could lead to an eminent hazard and causes a 20% or more reduction in pressure of a pipeline or shutdown in operation.

Reporting exceptions in Part 195 are the same as items 5 and 6 above for Part 191.

Unfortunately, the U.S. DOT has once again failed to comply with safety relating conditions including:

1. Any condition that is a hazard to life, property, or the environment.
2. Any condition that causes a reduction in MAOP (Part 192) or MOP (Part 195) of a pipeline.

Comments on safety-related condition regulations included:

1. Relatively few safety related condition reports are filed.
2. The number of safety related condition reports should be substantially greater than incident or accident reports.
3. The U.S. DOT has failed to define criteria for defining “general corrosion”.
4. The U.S. DOT has failed to define criteria for defining corrosion pitting to a degree that leakage might result.
5. Why are there differences in defining safety related conditions in 49 CFR Part 192 and 49 CFR Part 195?
6. The U.S. DOT has failed to define pipeline mechanical damage that is a hazard to life, property, or the environment.
7. The U.S. DOT has failed to define any leak that constitutes an emergency.
8. The requirements for safety related condition reporting in Chapter 601 do not relieve the operator from reporting safety related conditions that are corrected by repair or replacement.
9. The requirements for safety related condition reporting in Chapter 601 do not relieve the operator from reporting safety related conditions that are more than 220 yards from a building intended for human occupancy.
10. The U.S. DOT failed to define numerous other safety related conditions in a pipeline.
11. The U.S. DOT has failed to issue regulations in 49 CFR 191 requiring the reporting of each pipeline facility that is “hazardous to life, property, or the environment” as required by 49 CFR 190.233.
12. The U.S. DOT has failed to issue regulations in 49 CFR 191 requiring the reporting of each pipeline facility that “poses a pipeline integrity risk to the public safety, property, or the environment” as required by 49 CFR 190.239.
13. The lack of action by the U.S. DOT has prevented the development of a significant database on pipeline conditions before incidents or accidents occur.
14. The U.S. DOT’s lack of action has prevented the U.S. DOT to be proactive in avoiding incidents and accidents.
15. However, the U.S. DOT has continued to display conscious indifference to public health, public safety, property, and the environment.

**Carbon Dioxide Pipeline Regulation**

The U.S. DOT shall regulate carbon dioxide transported in a hazardous liquid pipeline facility.

Comments on the above include:

1. Carbon dioxide is often a gas at conditions transported in a pipeline and regulations should be located in 49 CFR Part 192.
2. Carbon dioxide is transported in carbon dioxide only pipelines, not with hazardous liquids.
3. The primary safety issue with carbon dioxide pipelines is propagating ruptures.
4. Section 195.111 in 49 CFR Part 195 only requires a carbon dioxide pipeline system be designed to mitigate the effects of fracture propagation.

**Emergency Response to Hazardous Liquid Leaks and Ruptures**

The U.S. DOT shall survey, assess devices and systems to detect, locate, and minimize hazardous liquids released from hazardous liquid pipeline ruptures and leaks. The U.S. DOT shall also prescribe standards on when pipeline operators shall use systems and devices to detect, locate, and minimum releases of hazardous liquids.

Comments include:

1. To date, the U.S. DOT has not responded to the above requirements other than in 195.452 for integrity management of pipelines in high consequence areas. Regulations in 195.452 require:
	1. An operator must have a means to detect leaks.
	2. An operator must evaluate its leak detection capability and modify as necessary to protect each high consequence area.
	3. An operator is required to determine if emergency flow restricting devices or remotely controlled valves are needed in each pipeline in a high consequence area.
2. The U.S. DOT has failed to issue specific regulations on the above and leave the evaluations and decision process on leak detection to the pipeline operators in 49 CFR Parts 192 and 195.
3. However, compliance with emergency response requirements in 49 CFR Parts 192 and 195 occur unless the pipeline operator has fast and reliable on line leak detection capability.

**Low-Stress Hazardous Liquid Pipelines**

The U.S. DOT shall issue regulations subjecting low-stress pipeline hazardous liquid pipelines to the same requirements as other hazardous liquid pipelines except for pipelines already excluded from regulation including:

1. Pipelines subject to the U.S. Coast Guard’s jurisdiction and
2. Pipelines less than one mile long servicing refining, manufacturing, truck, rail, or vessel terminals.

Comments include:

1. The U.S. DOT has failed to remove all the regulatory exceptions on low-stress hazardous liquid pipelines.
2. The U.S. DOT apparently believes that internal pressure causing hoop stress is the only critical source of stress acting in pipelines.

**Incorporate Industry Standards**

The U.S. DOT shall, to the extent appropriate and practical, incorporate industry standards that have been adopted as part of the Federal pipeline safety program under this Chapter.

Comments include:

1. There are many industry publications that could and should be incorporated into 49 CFR Parts 192 and 195, but are not.
2. It appears that the U.S. DOT does not want to incorporate relevant standards, because of the agencies limited expertise to enforce the documents.
3. Prescriptive regulations are needed to allow more enforcement of regulations.

**Direct Assessment**

The U.S. DOT shall issue regulations on direct assessment inspections for the presence of:

1. External corrosion,
2. Internal corrosion, and
3. Stress corrosion cracking.

The regulatory requirements for direct assessment appear in Subpart O of Part 192 on gas transmission integrity management for high consequence areas and Section 195.588 of Part 195 on corrosion control of hazardous liquid pipelines. Both Parts 192 and 195 reference and incorporate National Association of Corrosion Engineers SP 0502. Part 192 also references ASME B31.8S on direct assessment.

Comments include:

1. The U.S. DOT pipeline safety regulations and the referenced industry standards do not include statistical analysis procedures to analyze the data from direct assessments.
2. Data analysis is very critical, because Direct Assessment involves a sampling program to determine the state of corrosion related damage in a pipeline segment.
3. Any sampling program without a proper statistical analysis involves an incomplete process that is subject to considerable error in analysis of the data that is gathered.

**Implementation of NTSB Recommendations**

U.S. DOT shall issue regulations in the following areas:

1. Implement API 165 (RP 1165);
2. Implement a standard on alarm management; and
3. Implement standards for pipeline controller training that includes pipeline operation simulations to recognize and respond to:
	1. Abnormal operating events and
	2. Pipeline leaks (and ruptures).

Comments include:

1. Section 192.631(c) incorporates API RP 1165 and includes other regulatory requirements on the subject.
2. Section 192.631(e) contains regulatory requirements on alarm management, but fails to incorporate the API recommended practice on the subject.
3. Section 192.631 covers controller training, but fails to incorporate API 1130 on pipeline operating simulations.
4. API RP 1130 is titled for liquids, but the information and procedures also apply somewhat to gas pipelines.

**State Pipeline Safety Advisory Committees**

State Pipeline Safety Advisory Committees cover U.S. DOT responses to State recommendations on pipeline safety.

Comments include:

1. Few States have created and maintained advisory committees.
2. I do not know of any publicized state advisory program and doubt that such exists.

**Opportunity to Present Views**

The U.S. DOT shall give an interested person an opportunity to make oral and written presentations of information, views, and arguments when prescribing a new standard.

Comments include:

1. Title 49 CFR 190.317 only applies to written information, views, or arguments.
2. Presentations are not addressed.
3. The U.S. DOT has not issued comprehensive criteria for interested persons to present information, views, and arguments on new standards.
4. Only written comments are allowed.

**Grandfathering of Regulations**

New pipeline safety standards issued by the U.S. DOT shall not apply to design, installation, construction, initial inspection, or initial testing of a pipeline facility existing when the new standard is adopted.

Comments include:

1. The above grandfathering provisions should only apply to initial design, initial installation, and construction of an existing pipeline.
2. Design requirements cannot be totally separated from operating and maintenance requirements, because design requirements are based on location, operating, and maintenance requirements.

**State Authority to Adopt More Stringent Regulations**

A State authority that has submitted a current certification under 60105(a) of this title may adopt additional or more stringent safety standards for intrastate pipeline facilities and intrastate pipeline transportation only if those State standards are compatible with the minimum standards prescribed by this chapter. A State authority cannot adopt additional standards for interstate pipeline facilities or interstate pipeline transportation.

Comments on the above include:

1. Title 49 CFR Parts 192 and 195 are minimum regulations for minimum public risk pipelines. They are grossly inadequate for all areas of public and environmental safety.
2. The U.S. DOT has never issued explicit regulations defining interstate pipeline transportation.
3. FERC has several criteria for defining interstate and intrastate pipeline facilities and for defining interstate and intrastate transportation.
4. The criteria in Appendix A of 49 CFR Part 195 is clear on intrastate versus interstate transportation by pipeline, but Part 192 does not contain a similar appendix.

**Jurisdiction Limits on U.S. DOT Regulating Intrastate Pipelines**

The U.S. DOT may not prescribe or enforce safety standards for intrastate pipeline facilities or intrastate pipeline transportation that are regulated by a State authority that annually submits a certification and:

1. Has regulatory jurisdiction,
2. Has incorporated all Federal pipeline safety standards,
3. Is enforcing all safety standards,
4. Supports a one-call damage prevention in the State and enforces a damage prevention program, and
5. May require inspection and maintenance plans be prepared and submitted for approval.

The certifications submitted by States to the U.S. DOT shall include:

1. Name and address of each person or operator to whom the certification applies,
2. Each incident or accident report received during the previous year, and
3. Audit and enforcement practices of the State authority.

Comments include:

1. The U.S. DOT is required to monitor State programs to ensure they comply with the certification requirements.
2. However, these monitoring programs are not extensive.

**State Agreements**

If the U.S. DOT does not receive a certification application from a State, a separate agreement can be made with a State to cover enforcement of intrastate gas pipeline transportation.

If the U.S. DOT accepts a certification application from a State authority for intrastate pipelines, the U.S. DOT can make an agreement to jointly participate in oversight and enforcement of Federal safety standards or interstate pipelines.

**State Pipeline Safety Grants**

The U.S. DOT can pay not more than 80% of the cost of personnel, equipment, and activities of a State pipeline enforcement authority.

Comments include:

1. The U.S. DOT has not published any guidelines to assist States on intrastate pipeline issues that need State enforcement.
2. Over 99% of the gas distribution pipeline facilities are considered by the U.S. DOT to be in intrastate commerce even if they receive gas from interstate transmission companies.

**Inspection and Maintenance Plans (IMP)**

Each person owning or operating an intrastate gas facility or hazardous liquid pipeline facility shall carry out a current written plan for inspection and maintenance of each pipeline facility. The U.S. DOT may require a person owning or operating a regulated pipeline facility to file a plan for inspection and maintenance for approval.

In deciding on approval of each IMP, the U.S. DOT shall consider:

1. Relevant available pipeline safety information,
2. Appropriateness of the plan for the type of facility,
3. Reasonableness of the plan, and
4. Extent to which the plan will contribute to public safety and environmental protection.

Comments on the above include:

1. The original Natural Gas Pipeline Safety Act of 1968 (NGPSA 1968) included Inspection and Maintenance Plans for each pipeline facility.
2. In the 1970s, the U.S DOT and States received thousands of Inspection and Maintenance Plans (IMPs) for numerous pipeline facilities.
3. The U.S. DOT never issued regulations on what pipeline facilities needed IMPs and what was to be included in the plans.
4. ASME B31.4 and B31.8 never issued requirements or even mentioned IMPs.
5. In the late 1970s, the U.S. DOT adopted an erroneous position that operating and maintenance procedural manual was the same as IMPs.
6. Neither the U.S. DOT nor pipeline industry took appropriate actions on IMP requirements, because they were expensive to prepare and implement. The U.S. DOT did not have the manpower to review for approval thousands of IMPS.
7. FERC does not comply with NGPSA 1968, because they only consider the location of gas pipeline facilities and not the origin and destination of the natural gas that is transported by pipeline.

**Special Inspection and Testing**

For pipeline facilities in States not having a certification or agreement for jurisdiction and enforcement, the U.S. DOT shall prescribe the frequency and testing of pipelines on a case-by-case basis after considering the following:

1. Location of a facility;
2. Type, size, age, manufacturer, method of construction, and condition of the pipeline facility;
3. Operating pressures of the facility;
4. Nature and volume of transported materials;
5. Climatic, geologic, and seismic characteristics (including soil characteristics) and conditions of the area in which the pipeline facility is located;
6. Existing and projected population and demographic characteristics of the area;
7. Frequency of leaks;
8. For hazardous liquid pipeline facilities, the proximity to areas that are unusually sensitive to environmental damage; and
9. Other criteria prescribed by the U.S. DOT.

Comments on the above include:

1. The requirements to consider in special testing and inspection are only found in 49 CFR 190.239 on issuing safety orders due to integrity risks.
2. The requirements in this section should apply to both transmission and gas distribution.
3. The U.S. DOT has failed to comply with the requirements in this section.

**Replacing Cast Iron Gas Pipelines**

The U.S. DOT shall ensure that each operator of cast iron gas pipeline facilities:

1. Has a plan for safe management and replacement of cast iron piping,
2. Is complying with the plan, and
3. Continues to replace cast iron piping.

Comments include:

1. Title 49 CFR Part 192 has never required that cast iron piping be coated or cathodically protected due to external corrosion.
2. ASME B31.4 and NACE SP 0169 require cast iron piping to be cathodically protected.
3. Cast iron piping clearly falls in the category of integrity risk and hazardous pipeline facility and should not be allowed in any pipeline.
4. Cast iron piping has a much higher incident rate than other materials in gas distribution systems.
5. The U.S. DOT appears to be oblivious of the dangers of cast iron piping.

**High-Density Populated Areas and Environmentally Sensitive Areas**

The U.S. DOT was required to:

1. Not later than October 24, 1984, prescribe standards for identifying gas pipeline facilities (except gas distribution facilities) located in a high-density area and
2. Not later than October 24, 1994, prescribe standards for identifying hazardous liquid pipeline facilities located in a:
	1. High-density populated area and/or
	2. Unusually sensitive to environmental damage if there is a hazardous liquid pipeline release (leak or rupture).

Comments include:

1. Criteria for identifying gas transmission high-density areas were not issued until December 15, 2003, about nineteen (19) years after the Congressional deadline.
2. Criteria for identifying hazardous liquid pipeline areas were issued on December 1, 2000, about six (6) years after the Congressional deadline.

**Risk Analysis and Integrity Management**

U.S. DOT shall require:

1. Each operator of a gas transmission pipeline is required to conduct an analysis of the risks to each facility in a high consequence area.
2. Each operator of a gas transmission pipeline in a high consequence area shall adopt and implement a written integrity management program.
3. Each pipeline in a high consequence area is to be integrity assessed using internal inspection, pressure testing, or direct assessment to determine whether the pipeline has any integrity deficiencies.
4. Integrity assessments are to be performed periodically to ensure each pipeline has adequate integrity.

Comments on the above include:

1. The risk analysis requirements failed to address the risks of each pipeline facility to the public, property, and environment in high consequence areas.
2. The regulations issued in the area were very general and allowed the pipeline companies to decide how to comply.
3. The Inspection and Maintenance Plan regulations required since 1968 in the original pipeline safety act and through the present time in Chapter 601 would have addressed most of the needs for integrity maintenance. Unfortunately, over 40 years of pipeline regulatory action was wasted and the opportunities to save many lives if properly enforced.
4. What is the criteria for defining the dividing up of a pipeline system into various “pipeline facilities”? For example, risk assessment and integrity management plan for a compressor station would be significantly different than a pipeline segment.
5. Title 49 CFR Part 192 defines “pipeline facility” as:
	1. New or existing pipelines,
	2. Pipeline rights-of-way,
	3. Any equipment,
	4. Any building,
	5. Any facility, and
	6. Any gas treating equipment or facility.
6. Title 49 CFR Part 192 defines “pipeline” as all parts of a physical facility through which gas moves in transportation, including:
	1. Pipe;
	2. Valves;
	3. Other appurtenance attached to pipe; and
	4. Compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies.
7. Title 49 CFR Part 192 defines “pipeline section” as a continuous run of transmission line between or adjacent to:
	1. Compressor stations,
	2. Compressor station and storage facility,
	3. Compressor station and a block valve, or
	4. Between block valves.
8. “Pipeline section” is defined in 49 CFR Part 192, but “pipeline segment” which is used in several areas of Part 192 is not defined.
9. In 49 CFR Part 195, “pipeline” and “pipeline system” are the same by definition.
10. To date, the U.S. DOT has only required risk analysis and integrity management of pipeline segments in high consequence areas.
11. Chapter 601 requires risk analysis and integrity management of each of the numerous pipeline facilities. There are many more pipeline facilities than pipeline segments.
12. Once again, the U.S. DOT wrongfully allows pipeline companies to dictate how compliance activities are to be conducted.
13. Present day integrity management regulations are not consistent with its own requirements in other parts of 49 CFR Parts 192 and 195 and industry standards such as ASME B31.8.
14. Present regulatory requirements in 49 CFR Subpart O and 195.452 illustrate the lack of technical competence and willingness to protect the public and environment from unnecessary hazards for pipelines.

**Additional Optional Regulations**

The U.S. DOT may also prescribe standards requiring an operator of a pipeline facility to include in an integrity management program:

1. Changes to valves or the establishment or modification of systems that monitor pressure and detect leaks based on the operators risk analysis and
2. The use of emergency flow restricting devices.

Comments include:

1. Subpart O of 49 CFR Part 192 has not addressed leak detection systems.
2. Subpart O leaves the decision on installing automatic shutoff or remote controlled valves to the pipeline operator.
3. The actions taken by the U.S. DOT are inadequate for public safety and environmental protection. Mandatory requirements are needed.

**Lack of Regulations on Integrity Management**

Section 60109(c)(8) on integrity management requires in the absence of regulations addressing the elements of an integrity management program, the operator of a pipeline facility shall:

1. Conduct a risk analysis of a pipeline facility.
2. Adopt and implement an integrity management program described in Section 60109 within 24 months.
3. Complete a baseline integrity assessment not later than 10 years after integrity rules are first enacted.
4. At least 50% of such facilities shall be integrity assessed within five (5) years.
5. Facilities shall be prioritized for integrity assessment based on all risk factors including:
	1. All previously discovered defects or anomalies and
	2. Any history of leaks, failures, and repairs.

Comments on the above include:

1. The risk analysis should be stated as the risk of failure of each pipeline facility to the public, property, and the environment.
2. Section 60109(c)(8) requires each pipeline operator to adopt and implement an integrity management program for all pipeline facilities not just pipelines in high consequence areas.

**Review of Integrity Management Programs**

The U.S. DOT shall review each risk analysis and integrity management program to determine if they comply with Federal regulations. If the U.S. DOT finds that a risk assessment or integrity management program is not adequate for the safe operation of the pipeline, the U.S. DOT may conduct proceedings under this Chapter (see 49 CFR Part 190).

A State authority that has an agreement without certification under 60106, may be allowed to review the risk analysis and integrity management program for a pipeline facility. A State authority may also provide the U.S. DOT a written assessment of the risk analysis and integrity management programs. The U.S. DOT shall consider State assessments.

Comments include:

1. Definitions in 49 CFR Parts 192 and 195 of pipeline facility require numerous risk analysis and integrity management for each pipeline systems, because each pipeline facility should be a separate program.
2. ASME B31.8S only addresses risk analysis and integrity management of “a pipeline systems or segments”, not compressor, meter, pressure control, and block valve stations, treating facilities, and underground storage facilities.
3. ASME B31.8 in Section 850.1 states that because of many variables in operation and maintenance of pipeline facilities, it is not possible to prescribe a detailed set of operating and maintenance procedures that will encompass all cases. The same should also apply to risk assessments and pipeline integrity programs.
4. In other words, a “one-size-fits-all” risk assessment and integrity program is not adequate for an entire pipeline system of many types of pipeline facilities.
5. It is unlikely that the U.S. DOT has performed a comprehensive analysis of each risk analysis for each pipeline facility.
6. Few, if any, of the U.S. DOT inspectors know how ever developed and implemented a risk management or integrity management program.

**Excess Flow Valve Standards**

U.S. DOT safety standards shall require each gas distribution company install an excess flow valve on each new or replaced service line to a single family residence as part of the gas distribution integrity management program.

Not later than April 24, 1994, the U.S. DOT shall prescribe standards on when and where excess flow valves shall be installed by the operator of each natural gas system. The U.S. DOT shall consider the following in the requirements for excess flow valve standards:

1. System design pressure;
2. System operating pressures;
3. Types of customers;
4. Technical feasibility and cost of installing, operating, and maintaining the excess flow valve; and
5. Other relevant factors.

The U.S. DOT shall also prescribe standards requiring the operator of a natural gas distribution system to notify in writing customers in which excess flow valves are not installed, but can be installed at the customers’ request and cost. Customers are to be advised on:

1. Availability of excess flow valves,
2. Safety benefits, and
3. Costs to install, maintain, and replace excess flow valves.

Excess flow valves shall be installed for customers that agree to pay for all installation costs.

Section 192.383(b) requires an excess flow valve (EFV) shall be installed after February 12, 2010 on each single-family residence where:

1. The service line does not operate at a pressure of 10 psig or greater throughout the year,
2. Contaminants in the gas stream could interfere with EFVs operation or cause loss of service to a residence,
3. An EFV could interfere with normal operations such as blowing liquids from the line, or
4. An EFV meeting performance requirements in Section 192.381 is not available.

Comments on U.S. DOT compliance with Title 49 Chapter 601 include:

1. Excess flow valves are not required to be installed at locations other than single-family residences such as schools, hospitals, businesses, and manufacturing facilities.
2. The U.S. DOT failed to require installation of excess flow valves based on:
	1. Inadequate cathodic protection on steel service lines,
	2. Service lines in areas of high underground construction activity,
	3. Service lines in areas of high surface loading such as trucks and buses,
	4. Leak history, and
	5. Continuing surveillance conclusions.

**Pipelines Facilities Hazardous to Life and Property**

The U.S. DOT after notice and an opportunity for a hearing, may decide that a pipeline facility is hazardous if the U.S. DOT decides either of the following.

1. Operation of the facility is or would be hazardous to life, property, or the environment.
2. Any part of the facility is or will be constructed or operated with equipment, material, or a technique that the U.S. DOT decides is hazardous to life, property, or the environment.
3. In making this determination, the U.S. DOT shall:
	1. Characteristics of the pipe and other equipment used in the pipeline facility, including:
		1. Age,
		2. Manufacturing process,
		3. Physical properties,
		4. Method of construction, and
		5. Method of assembling the equipment.
	2. Nature of the materials transported including:
		1. Corrosive qualities,
		2. Deterioration qualities,
		3. Sequence in which materials are transported, and
		4. Pressure required to transport the materials.
	3. Aspects of the area in which the pipeline facility is located including:
		1. Climatic conditions,
		2. Geologic conditions, and
		3. Soil conditions.
	4. Proximity of the hazardous liquid pipeline to environmentally sensitive areas.
	5. Population density and population growth patterns,
	6. Any NTSB recommendations.
	7. Other factors the U.S. DOT considers to be appropriate.

If the U.S. DOT decides that a pipeline facility is or would be hazardous, the operator of the pipeline facility shall be ordered to take necessary corrective action, including suspended or restricted use of the facility, physical inspection, testing, repair, replacement, or other appropriate action.

Comments include:

1. Section 190.233 on Corrective Action Orders incorporated the following requirements on March 8, 2005 related to the hazardous pipeline facilities requirements. Unfortunately, Section 190.233 only incorporated the wording in Chapter 601 and did not include additional criteria in determining when a pipeline is judged to be hazardous and corrective action is required.
2. Section 192.613 on Continuing Surveillance has since the early 1970s required a determination of when a pipeline segment becomes hazardous and corrective action is required.
3. Section 192.703(b) has, since the early 1970s, required that each pipeline segment that becomes unsafe must be replaced, repaired, or removed from service.
4. Section 192.703(c) requires that hazardous leaks be repaired.
5. Section 195.401(b)(1) requires that whenever an operator discovers any condition that may adversely affect the safe operation of its pipeline system, it must correct the condition in a reasonable time. However, if the condition is of such a nature that it presents an immediate hazard to persons or property, the operator may not operate the affected part of the system until it has corrected the unsafe condition.
6. Section 195.402(c)(4) requires each operator of a hazardous liquid pipeline determine which pipeline facilities are located in areas that would require an immediate response by the operator to prevent hazards to the public if the facilities failed or malfunctioned.
7. Section 195.402(c)(6) requires each operator of a hazard liquid pipeline facility to minimize the potential for hazards in areas that require an immediate response and the possibility of recurrence of accidents analyzed under Section 195.402(c)(5).
8. Section 195.402(c)(11) requires each operator of a hazardous liquid pipeline facility to minimize the likelihood of an accidental ignition of vapors or gases in areas that require an immediate response to prevent hazards.
9. Title 49 CFR Parts 192 and 195 do not contain requirements to ensure that pipelines are designed, constructed, operated, and maintained to minimize failures of and releases from pipelines. All pipelines fail at various times and at various locations.
10. ASME B31.4 and B31.8 do not contain requirements to ensure that pipelines are designed, constructed, operated, and maintained to minimize failures of and releases from pipelines.
11. All pipelines experience failures and cause hazards to people, property, and the environment.
12. What is the “true” goal of pipeline safety agencies on dealing with the hazards from pipelines?
13. The U.S. DOT and State Agencies are not meeting the requirements stated in Title 49 Chapter 601 and even Part 192 and Part 195, because of the vagueness of regulations and the passive enforcement by the U.S. DOT and State Agencies.
14. Much of the problem lies in the failures of pipeline safety agencies to assume a position of leadership and require pipeline operators to assume a burden of proof on their compliance activities.
15. Pipeline safety agencies allow the pipeline industry to establish the safety performance of the pipeline industry.

**Pipeline Employee Role in Causing an Accident**

If the U.S. DOT determines that the actions of a pipeline employee contributed to an accident or incident, the U.S. DOT shall direct the pipeline operator to relieve the employee from participating from those activities, reassign the employee, or place the employee on leave.

**Customer-Owned Natural Gas Service Lines**

The U.S. DOT shall prescribe standards requiring an operator of a natural gas distribution system that does not maintain customer-owned natural gas service lines up to building walls to advise its customers of:

1. Requirements for maintaining those lines,
2. Any resources known to the operator that could assist the customers in carrying out the maintenance,
3. Information the operator has on operating and maintain its lines that could assist customers, and
4. The potential hazards of not maintaining the lines.

Title 49 Section 192.16 on customer notification requires each customer be notified once in writing of the following:

1. Operator does not maintain customer’s piping.
2. If the customer’s buried piping is not maintained, it may be subject to the potential hazards of corrosion and leakage.
3. Buried gas piping should be:
	1. Periodically inspected for leaks,
	2. Periodically checked for corrosion if piping is metallic, and
	3. Repaired if any unsafe condition is found.
4. When excavating near buried gas piping, piping should be located in advance and the excavation done by hand.
5. The operator or plumbing contractors can assist in locating, inspecting, and repairing service lines.

Comments on the above include:

1. The customer should first be advised that the service line beyond the gas meter is owned by the property owner and he is responsible for operation and maintenance.
2. A single notification of a home owner is inadequate.
3. This notification should be part of the customer’s public awareness or education problem.
4. This situation of a home owner’s owning a buried gas line usually occurs when the gas meter is installed near a gas main and the meter is vulnerable to damage from traffic near the meter. This is a bad practice and requires protection from vehicular damage.
5. Chapter 601 and Part 192.16 failed to notify the home owner to participate in a one-call system and mark his service line when excavation is performed near his property.

**One-Call Notification System**

U.S. DOT shall require pipeline operator to participate in a one-call system and mark facilities when notified of excavation and other activities that could damage a pipeline. Penalties are to be assessed to excavator not complying with one-call laws.

Comments include:

1. “Excavator” should be defined.
2. Other activities that could damage a pipeline should include plastic piping.

**Technical Safety Standards Committee**

Each technical committee will consist of five (5) members. Membership basis shall be:

1. Five individuals from agencies of the U.S. and State governments,
2. Five individuals from the general public, and
3. Five individuals selected from the pipeline industry.

Knowledge requirements of the 15 members include:

1. One person in each committee from the pipeline industry knowledgeable in risk assessment on cost-benefit analysis.
2. Two persons in each committee experienced in environment or public safety.
3. Zero individuals that have a significant financial interest in the industry.
4. Two individuals on each committee shall be State Commissioners.

Comments include:

1. The technical safety committee have not had enough technical knowledge to make an impact on pipeline safety.
2. The technical safety committee have little authority to effect pipeline safety.

**Public Education Programs**

Each operator shall carry out a continuing program of public education on:

1. Use of one-call notification systems,
2. Possible hazards due to unintended releases from the pipeline,
3. Physical indications that a release may have occurred,
4. Steps to be taken for public safety, and
5. How to notify or report an unintended release.

Comments include:

1. Regulations issued on this subject are too general and merely report the requirements in Chapter 301.
2. The U.S. DOT has complied poorly with the above requirements.

**Compliance and Waivers**

 A person owning or operating a pipeline shall:

1. Comply with applicable safety standards;
2. Prepare and carry out a plan for inspection and maintenance;
3. All access to or copying of records, make reports, provide information, and allow entry or inspection by regulatory agency personnel; and
4. Conduct a risk analysis and adopt and implement an integrity management program for high consequence pipelines.

The above list focuses on the most important activities to be performed by each pipeline company.

**Actions by Private Persons**

A person may bring a civil action in a Federal Court for an injunction of another person for a violation of this Chapter or a regulation prescribed or order issued under this Chapter.

**Risk Management**

The U.S. DOT shall establish risk management demonstration projects. In carrying out a demonstration project, the U.S. DOT shall:

1. Invite owners and operators of pipeline facilities to submit risk management plans for timely approval by the Secretary.
2. Require that a risk management plan contain measures that are designed to achieve an equivalent or greater overall level of safety than would otherwise be achieved through compliance with the Standards contained in this Chapter or promulgated by the U.S. DOT under this Chapter.
3. The risk management plan must provide for all of the following:
	1. Collaborative government and industry training.
	2. Methods to measure the safety performance of risk management plans.
	3. Development and application of new technologies.
	4. Promotion of community awareness concerning how the overall level of safety will be maintained or enhanced by the demonstration project.
	5. Development of models that categorize the risk inherent to each covered pipeline facility, taking into account consideration the location, volume, pressure, and material transported or stored by the pipeline facility.
	6. Application of risk management and risk management methodologies that are suitable to the inherent risks that are determined to exist through the use of models developed under paragraph (e).
	7. Development of project elements that are necessary to ensure that:
		1. Owners and operators that participate in the demonstration project demonstrate that they are effectively managing the risk referred to in paragraph (e) and
		2. Risk management plans carried out under the demonstration project can be audited.
	8. A process whereby an owner or operator of a pipeline facility is able to terminate a risk management plan or with the U.S. DOT amend, modify, or otherwise adjust a risk management plan to respond to:
		1. Changed circumstances or
		2. A determination by the U.S. DOT that the owner or operator is not achieving an overall level of safety that is at least equivalent to the level that would be otherwise be achieved through compliance with the Standards contained in this Chapter or promulgated by the U.S. DOT.
	9. Such other elements as the U.S. DOT with the agreement of the owners and operators that participate in the demonstration project determine to further the purposes of this section.
	10. An opportunity for public comment in the approval process.

Comments on the above include:

1. Because 49 CFR Parts 192 and 195 are written in general, performance-based language where each pipeline operator and sometimes each pipeline employee is allowed to determine how to comply with a regulatory requirement, there is no such thing as standardized compliance practices.
2. Section 850.1 in ASME B31.8 on operating and maintenance procedures contains the following statements:
	1. Because of the many variables, it is not possible to prescribe in a Code a detailed set of operating and maintenance procedures that will encompass all cases.
	2. It is possible, however, for each operating company to develop operating and maintenance procedures based on the provisions of the Code, its experience, and its knowledge of its facilities and conditions under which they are operated that will be adequate from the standpoint of public safety.
3. Although the term standard is widely used extensively in Title 49 Chapter 601, there are no detailed comprehensive standards in 49 CFR Parts 192 and 195.
4. Some of the industry Codes, standards, and recommended practices referenced in Parts 192 and 195 contain standardized requirements, most cover how to perform compliance activities of facilities that vary widely in practice.
5. Because of the wide ranges, underground conditions, temperatures, sizes, and fluids transported, it is impractical to create and follow “one-size-fits-all” standards for all pipelines.
6. Since pipelines are 99+% buried, it is difficult to measure the integrity characteristics of each pipeline.
7. The concept of a risk management program of pipelines with so many wide ranging variables is very impractical and should be dropped from Title 49 CFR Chapter 601.
8. However, more data analyses and concept testing is needed to verify the performance and attributes of new methods to perform pipeline safety activities.

**Population Encroachment and Rights-of-Way (Section 60127)**

The U.S. DOT and FERC in conjunction with other Federal, State, and local agencies shall undertake a study of land use practices, zoning ordinances, and preservation of environmental resources. Purposes of the study are:

1. To determine effective practices to limit encroachment on existing pipeline right-of-way;
2. To address and prevent hazards and risks to the public, pipeline workers, and the environment associated with encroachment and rights-of-way;
3. To raise the awareness of the risks and hazards of encroachment on pipeline rights-of-way; and
4. To address how to best preserve environmental resources in conjunction with maintaining pipeline operators’ regulatory obligations to maintain rights-of-way and to protect public safety.

In conducting the study, the U.S. DOT shall consider, at a minimum, the following:

1. Legal authority of Federal, State, and local governments in controlling land use and limits of such authority;
2. Current practices of Federal, State, and local governments in addressing land use issues involving a pipeline easement; and
3. Most effective way to encourage Federal agencies and State and local governments to monitor and reduce encroachment upon pipeline rights-of-way.

The U.S. DOT shall encourage Federal agencies and State and local governments to adopt and implement appropriate practices, laws, and ordinances, as identified in the U.S. DOT report, to address the risk and hazards associated with encroachment upon pipeline rights-of-way and to address potential methods of preserving environmental resources, while maintaining pipeline right-of-way, consistent with pipeline safety.

Comments on the above include:

1. The requirements in 60127 overlook the encroachment of new and existing pipelines on the public and environmental resources. This is an issue within the scope of the authority of the U.S. DOT.
2. Title 49 CFR 195.210 contains the following requirements for hazardous liquid pipelines:
	1. Pipeline right-of-way must be selected to avoid, as far as practical, areas containing private dwellings, industrial buildings, and places of public assembly.
	2. No pipeline may be located within 50 feet of any private dwelling, or any industrial building or place of public assembly in which persons work, congregate, or assemble, unless it is provided with at least 12 inches of cover in addition to that prescribed in Title 195.248.
3. The authors of this section totally miss the need to address pipeline encroachment on populated areas and environmental sensitive areas.
4. Issues that should have been studied that are within the scope of the U.S. DOT include:
	1. Minimum width of pipeline rights-of-way (ROW). The width of the ROW should be based on the diameter and operating pressure of the pipeline.
	2. Detection of long term, small leaks that miss detection by aerial patrol.
	3. Limits and inadequacies of pipeline patrol regulations.
	4. Creation of corridors for hazardous materials transportation.
	5. Develop more explicit emergency response requirements.
	6. Develop comprehensive, prescriptive regulations that are easier to enforce.
	7. Increase penalties for non-compliance.
5. FERC has the power to cover pipeline routes, but does not exercise that power.
6. The existence of this requirement in Title 49 Chapter 601 illustrates the lack of objectivity of the U.S. DOT by appearing to blame the public for encroachment issues.
7. The only reports on this subject are Transportation Research Reports Numbers 219 and 281 conducted by the Transportation Research Board.

**Verification of Pipeline Qualification Programs (Section 60131)**

The U.S. DOT shall require each operator of a pipeline facility to develop and adopt a qualification program to ensure that individuals who perform covered tasks are qualified to perform such tasks. Covered tasks include:

1. With respect to a gas pipeline facility, has meaning under Section 192.801 and
2. With respect to a hazardous liquid pipeline facility, has meaning under Section 195.501.

Sections 192.801 and 195.501 define covered task as:

1. Is performed on a pipeline facility,
2. Is an operations or maintenance task,
3. Is required by 49 CFR 192 or 195, and
4. Affects the operation or integrity of the pipeline.

Comments on the above include:

1. Title 49 CFR 192 and 195 are not based on identifying specific tasks to be performed,
2. Because of the generally stated nature of 49 CFR Parts 192 and 195, the pipeline operating company has control on identifying tasks to be covered in their qualification program.
3. Title 49 CFR 192 and 195 generally and vaguely state activities to be performed, but not how the activities are to be performed. This situation results in guesswork for compliance purposes to comprehensive engineering processes.
4. Pipeline operators try to limit covered tasks as low level activities to be performed by low level employees and exclude high level activities to be performed by more technically qualified personnel and supervisors.
5. The NTSB recommendation on personnel qualifications included supervisors and engineers. Through the years, the Office of Pipeline Safety has ignored recommendations of the NTSB and other oversight agencies.

**Pipeline Control Room Management**

The U.S. DOT shall issue regulations requiring each operator of a gas or hazardous liquid pipeline to develop, implement, and submit to the U.S. DOT or State authority if an interstate pipeline located within the boundaries of a State that has an annual certification:

1. A human factors management plan designed to reduce risks associated with human factors, including fatigue in each control center of the pipeline.
2. Each plan must include a maximum limit on the hours of service established for controllers.

The U.S. DOT or State Agency shall review and approve each plan.

Comments on the above include:

1. Where did the authors of Title 49 Chapter 601 decide that the primary problem with pipeline control centers was controller fatigue?
2. Excessive hours should be avoided, but the design factors for pipeline control and monitoring are far more important.
3. Alarm design and management is extremely important.
4. Pipelines need to have automatic responses to some sets of alarms indicating a major leak or rupture.
5. Few of the pipeline companies utilize automatic or semi-automatic shutdowns for a response in accordance with the Federal regulations.
6. Another problem with pipeline control and monitoring is the reliability of instrumentation and electronic circuit reliability.
7. A major human factor preventing a rapid response in a control center involves a pipeline shutdown due to a false indication of a leak or rupture.
8. A controller that shuts down a pipeline facility that does not need to be shut down is likely to be suspended or fired. Therefore, pipeline controllers seldom shutdown a pipeline and advise supervisors in the control room of alarms indicating a shutdown is needed.
9. Therefore, a pipeline controller is more likely to be a human part of the Supervision Data and Control System that does not take action and passes the buck to others for abnormal operations or emergency response actions.

**Environmental Reviews of Pipeline Repairs (Section 60133)**

The President shall establish an Interagency Committee to develop and ensure implementation of a coordinated committee environmental review and permitting process in order to enable pipeline operators to commence and complete all activities necessary to carry out pipelines necessary within any time periods specified by the U.S. DOT.

Membership in the committee is to include the Chairman of the Council of Environmental Quality (or his designee) and representations of the following agencies:

1. Secretary of Transportation,
2. Administrator of the EPA,
3. Director of the U.S. Fish and Wildlife,
4. Assistant Administrator for Fisheries of NOAA,
5. Director of the Bureau of Land Management,
6. Director of the Minerals Management Service,
7. Assistant Secretary of the Army Civil Works, and
8. Chairman of FERC.

A memo of understanding between the agencies is to be executed and within 180 days of the memo being completed, each agency including the U.S. DOT shall revise its regulations as necessary to implement the provisions of the memo of understanding.

The U.S. DOT is to revise the pipeline safety regulations to the extent necessary to permit an operator subject to time to repair rules of the U.S. DOT to implement alternative mitigation measures until all permits have been granted. Alternative mitigation measures of a pipeline operator:

1. Must be consistent with the protection of human health, public safety, and the environment;
2. Has applied for and is pursuing diligently and in good faith all required Federal, State, and local permits to carry out the project; and
3. Proposed alternate mitigation measures must be compatible with pipeline safety(?).

The Secretary of Transportation shall appoint a person to assist in expediting pipeline repairs and resolving disagreements between Federal, State, and local agencies and the pipeline operator during agency review of any pipeline repair activity that must be consistent with human health, public safety, and the environment.

Comments on the above include:

1. The U.S. DOT has not issued “time to repair rules” for pipelines and cited existing regulations as being adequate for the subject.
2. Title 49 CFR 192.703 was cited as follows:
	1. Each segment of pipeline that becomes unsafe must be replaced, repaired, or removed from service.
	2. Hazardous leaks must be repaired promptly.
3. However, the U.S. DOT has not issued regulations on how to determine if a segment of pipeline becomes unsafe and when leaks become hazardous.
4. Title 49 CFR 195.401 was cited as follows:
	1. An operator must make repairs on its pipeline system according to the following requirements:
		1. Whenever an operator discovers any condition that could adversely affect the safe operation of its pipeline system, it must correct the condition within a reasonable time.
		2. However, if the condition is of such a nature that it presents an immediate hazard to persons or property, the operator may not operate the affected part of the system until it has corrected the unsafe condition.
	2. For pipelines in a high consequence area and an integrity assessment has been performed, the operator must correct the adverse integrity conditions as described in Section 195.452(h).
5. The U.S. DOT continues its failures to address the cleanup and remediation of spilled or released liquid petroleum into the water and ground environments. This is the primary concern of government agencies other that the U.S. DOT which does not appear to be as interested in the health and safety of the public and protection of the environment.
6. The primary concern of the U.S. DOT is the economic viability of the transportation industry in the USA.
7. The American Petroleum Institute and the American Society for Testing and Materials have issued standards or recommended practices for:
	1. Spill site assessment and
	2. Remediation of spill site.
8. There are instances where long term leaks in high permeability ground areas have released thousands of barrels of petroleum into the ground, ground water, and surface water.
9. Some petroleum components are soluble in water, especially benzene, ethylbenzene, toluene, and xylene. These hydrocarbons can make up 5% or more of the volume of petroleum.
10. Due to the U.S. DOT’s failures to address proper cleanup of petroleum spills, the U.S. EPA has “stepped in” to fill the void, but only on large spills in highly sensitive areas.
11. Fines assessed by the EPA are much greater than fines assessed by the U.S. DOT.

**Other Requirements**

Title 49 Chapter 601 also contains requirements in other areas including:

1. Waivers,
2. Financial responsibility of LNG facilities,
3. Administrative,
4. Authority to enforce regulations,
5. Judicial reviews,
6. Enforcement procedures,
7. Civil penalties,
8. Biennial reports to Congress,
9. Authorization of appropriations,
10. Dumping within pipeline right-of-ways,
11. Whistle blowers,
12. Pipeline safety grants to communities,
13. National pipeline mapping systems,
14. Coordination of environmental reviews,
15. State damage prevention programs,
16. Enforcement transparency,
17. User fees are included in Title 49 Chapter 603, and
18. Business regulation of petroleum pipelines by FERC is covered in Title 49 CFR 605.

**Summary of Non-Compliance Areas in Title 49 Chapter 601**

Areas of non-compliance by the U.S. DOT in Title 49 Chapter 601 include:

1. Including clear criteria for interstate natural gas pipelines and interstate transportation of natural gas.
2. Gathering line determination.
3. Failure to issue compliance standards within the regulations.
4. Failure to gather and analyze information and data on causes of incidents and accidents to support present and future regulatory actions.
5. Failure to consider the secondary effects of additional pipeline safety activities to support the economy. U.S. DOT only considers the direct costs to the pipeline industry.
6. The U.S. DOT has failed to issue pipeline safety standards, because the regulations are so vague in most cases. This vagueness allows the pipeline companies in many cases to determine what constitutes adequate compliance.
7. The U.S. DOT has failed to incorporate by reference many industry standards that could significantly improve compliance activities of pipeline companies.
8. The U.S. DOT has failed to gather and evaluate considerable amounts of data on pipeline incidents and accidents to support the need for new regulatory action. Failure to do so has made the U.S. DOT totally dependent on the pipeline industry on cost and benefit studies.
9. The U.S. DOT has failed to require that risk assessments by pipeline companies be based on overall cost to society and probable reductions in incidents on accident frequency and/or severity. The U.S. DOT allows pipelines to use unsupported guesswork for risk analysis and risk ranking.
10. The U.S. DOT continues to follow unnecessary, inefficient, and lengthy rulemaking procedures even if such activities are not required. This practice delays many needed safety initiatives, because of the Office of Pipeline Safety limited staff and consultants.
11. Title 49 Parts 191 and 195 do not address all conditions that are a hazard to life, property, or the environment, such as mechanical damage, ILI anomalies, and general corrosion.
12. Title 49 Parts 191 and 195 do not address all conditions that cause or have caused a significant change or restriction in operation of a facility.
13. U.S. DOT has failed to remove all the regulatory exceptions on low-stress hazardous liquid pipelines.
14. U.S. DOT has failed to incorporate numerous industry publications as standards in 49 CFR Parts 192 and 195.
15. U.S. DOT has failed to require appropriate statistical analysis of direct assessment data and in-line inspection data. Without proper statistical data, misuse of direct assessment and ILI data creates a significant risk factor.
16. The U.S. DOT has failed to completely comply with the NTSB recommendations on pipeline central control operations.
17. The U.S. DOT has failed to require continued compliance with regulatory requirements that are outside the scope of new pipeline safety regulations covering design, installation, construction, initial inspection, or initial testing of existing pipelines.
18. The U.S. DOT continues to not have comprehensive programs on the qualification of states to enforce Federal regulations.
19. The U.S. DOT has failed to issue regulatory requirements on inspection and maintenance plans for each pipeline facility.
20. The U.S. DOT has failed to ensure that each operator of cast iron gas pipeline facilities continue to replace cast iron piping, because 99+ of the gas distribution are allowed to be classified as intrastate by the pipeline operators. The U.S. DOT has little interaction with gas distribution safety issues.
21. Stated risk analysis requirements are based on “the risk to each facility” and not the risk to public health and safety, property, and the environment.
22. The U.S. DOT failed to issue specific and detailed requirements on how risk analysis are to be performed. The regulations allow guesswork to be used in lieu of proper risk analysis.
23. The U.S. DOT failed to issue specific regulatory standards on leak detection and use of emergency flow restricting devices.
24. The U.S. DOT has failed to issue regulations requiring an operator to adopt and follow an integrity management program in areas not required by regulations in high consequence areas.
25. The U.S. DOT failed to require that operating and maintenance procedures and plans be submitted for review and approval.
26. On pipeline facilities hazardous to life and property, the U.S. DOT did not incorporate the requirements into 49 CFR Parts 192 and 195. Requirements were placed in 49 CFR Part 190 under corrective action orders. Therefore, the issue will only become effective after incidents and accidents occur as corrective action. If placed in Parts 192 and 195, the requirements could and should be preventive and proactive in nature.
27. The placement of a customer’s meter is usually determined by the gas distribution company. Placement of a meter near a main exposes the meter to vehicular damage. Gas distribution companies should own the service line up to the customer’s first building. Most customers are not qualified to cover the operation, corrosion control, mechanical damage prevention, and emergency response on a service line.
28. Risk management of pipelines is unrealistic, because pipelines vary extensively in age, diameter, coatings, corrosiveness of the ground, operating practices, and maintenance practice. Risk management requires a high degree of knowledge on factors that inference the probability that a pipeline facility will fail. Bad idea.
29. The U.S. DOT has failed to accept the reality that much of the pipeline related encroachments are made by pipelines on existing populated areas.
30. The U.S. DOT failed to require that pipeline operators submit pipeline operator qualification program for review and approval.
31. The U.S. DOT has failed to issue regulations on the time to repair pipelines.

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June 8, 2018