

**Creating and Implementing a Paperless Process for  
Pipeline Safety:**

*Reducing Cost through Enhancing Efficiency*

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I. Agency and Industry Background

The South Carolina Office of Regulatory Staff (ORS) was created with the enactment of Act 175 of 2004. The ORS is responsible for many of the non-adjudicative functions associated with utility regulation that formerly fell under the Public Service Commission of South Carolina (PSC). Prior to Act 175, the PSC handled all aspects of utility regulation. The creation of the ORS by Act 175 provided a revised structure for addressing the public interest that clearly separates the adjudicative function of utility regulation(which remains with the PSC) from the investigative, legal, prosecutorial, and educational roles (now with the ORS).

Specifically, the ORS has sole responsibility for inspecting, auditing, and examining public utilities. The agency must be considered a party of record in all filings, applications, or proceedings before the PSC.

The ORS is charged with representing the public interest of South Carolina in utility regulation for the major utility industries -- electric, natural gas, telecommunications, water/wastewater, and transportation -- before the PSC, the court system, the South Carolina General Assembly, and federal regulatory bodies. The ORS also has responsibility for oversight of railroad safety and natural gas pipeline safety in South Carolina.

Act 175 defines public interest as a balance among three essential components: the concerns of the using and consuming public; the financial integrity of public utilities; and the economic development of South Carolina.

In addition, Act 175 created a State Regulation of Public Utilities Review Committee. This ten-member committee is composed of six members of the S.C. General Assembly and four

representatives from the general public. The Agency is an "Other Funded" Agency, primarily through collection of Gross Receipts Taxes on the utilities and operators.

II. Problem Statement: Can PLS Be More Efficient?

The South Carolina Office of Regulatory Staff's Natural Gas Pipeline Safety Program (PLS) is located in the Electric and Gas Regulation Department of ORS. The Pipeline Safety Program consists of three (3) fulltime inspectors and one Pipeline Safety Supervisor who devotes twenty (20) percent of his duties to inspections, and eighty (80) percent of his duties to administration. It is responsible for enforcing State rules, regulations, and statutes regarding Natural Gas Pipeline Safety through periodic inspections of investor-owned, municipal and natural gas authority operating systems. The Program is also charged with enforcing federal rules, regulations, and statutes through a partnership with the Pipeline and Hazardous Materials Safety Administration (PHMSA), a bureau of the United States Department of Transportation. The Pipeline Safety Program has discovered opportunities for its natural gas pipeline safety inspectors to save both time and money. The current process for reporting non-compliances with federal and state rules and regulations can be more efficient. Currently, the Program uses a hard-paper documentation process for its inspection reports and letters to operators notifying them of non-compliances.

During the course of an inspection, inspectors generally take notes on compliance issues during a safety inspection. They will then return home to access their laptops, log on to the ORS network, complete their inspection reports, print the reports and then meet the Pipeline Safety Supervisor periodically or even travel to the ORS headquarters in Columbia to file reports. The four inspectors reside in Greenwood, Winnsboro, Kershaw, and Jefferson. The

Pipeline Safety Supervisor then reviews the paper reports and determines which operators are out of compliance. He is required to generate a non-compliance letter and then mails the letter to the operator within three (3) days. The operator is required to mail a response to the ORS within fifteen (15) days. The Pipeline Safety Supervisor reviews the response letter and if no additional correspondence is required, he stores the reports and letters in file cabinets.

One of the Agency's core goals is responsiveness to the public and the utilities. The Pipeline Safety Program considers responsiveness to be not only performing inspections immediately, but also performing them efficiently with the least amount of financial burden to the utilities, operators and ratepayers. If the Program can decrease the amount of time spent associated with hard-paper processes, then the Program can increase the amount of time performing inspections. Additionally, if the Program can eliminate hard-paper processes, then there will be a decrease in equipment cost (i.e. vehicle wear, office supplies, cameras, printers, etc.). The primary beneficiaries of these efforts will be cost savings to the Agency and therefore savings to the utilities, operators and ratepayers. Additionally, public safety will benefit as inspectors will have more time to engage in their core duty of pipeline inspections.

### III. Data Collection: How Much Does Inefficiency Cost?

In order to have a better understanding of the costs that were involved in the paper processes, the first step was to contact the pipeline inspectors and Pipeline Safety Supervisor to discover what tools, materials and processes were being utilized in the paper Inspection process. This was solicited during one of the monthly staff meetings. Once these were gathered, the next step was to determine the cost of the items that were being used. The cost was ascertained through our Internal Operations Department (bookkeeping). It was discovered

that the hard paper documentation process is costly. Use of paper processes for the non-compliance reports cost no less than \$3374.56 per year.

- Paper--15 pages per report on average X 120 reports per year per inspector X 3.2 inspectors X \$.006 for each sheet of paper (\$34.56 per year)
- Storage Cost of files (undetermined)
- Printer/Ink Cost (\$140 per year)
- Laptop and Camera Cost, including air card (\$1880 per year)
- Extra Mileage Cost for Delivering Reports to Supervisor (\$1320 per year)

Use of the paper process for issuing non-compliance letters to operators that are out of compliance is costly and inefficient as well. The cost of the paper process for issuing non-compliance letters is no less than \$99.84 per year.

- Paper--40 letters per year X \$.006 for each sheet of paper X \$ .49 for postage (19.84 per year)
- Storage Cost of files (undetermined)
- Printer/Ink Cost (\$80 per year)

The total cost for the paperless process is \$3474.40. At this time, it is not possible to calculate the loss in productivity due to the paper process. Time spent transcribing notes from notepads to reports and travel time spent filing inspection reports with the Pipeline Safety Supervisor could be spent on the Program's core duty---inspections.

#### IV. Data Analysis: How Much Does Efficiency Cost?

It was hypothesized that eliminating paper and allowing inspectors to simultaneously complete inspections and inspection reports would decrease cost and increase efficiency. As a

result, the following plan and presentation (Appendix A) was conceived and presented to the Department Director and Deputy Director:

The Pipeline Safety Program proposes to purchase four iPads/tablets with a stylus for each of the four inspectors. Next, all Pipeline and Hazardous Materials Safety Administration (“PHMSA”) and Office of Regulatory Staff (“ORS”) forms will be downloaded on the iPad/tablet. This will allow inspectors to complete all forms while simultaneously performing inspections, to file reports instantaneously, to eliminate the need for laptops and cameras, to have more time for inspections, and to save money for the agency. Total Start-up Cost for the first year is a maximum of \$3840 and a minimum of \$2840.

- Tablets start at \$350 to iPads \$600. ( $\$350 \times 4 = \$1400$ ,  $600 \times 4 = \$2400$ )
- Data plan \$30 per month ( $\$30 \times 4$  Inspectors  $\times$  12 months = \$1440)
- IT support (downloading of the “Dropbox” application) \$0.00

However, at a 3 year average (the lease on the laptops is 3 years) the total cost will be \$1906.67 per year for the tablets and \$2240 per year for the iPads.

In order to further reduce cost the Pipeline Safety Program also proposes that all future correspondence with operators that result from inspections be paperless. All non-compliance letters and follow-up inspection letters will be emailed. The department will also require operators to file responses electronically. The benefits that will result from this move include: saving time from the delivery of U.S. mail, a decrease in ORS mandated response time, savings on postage, paper, and office supplies, reduced need for administrative assistant, and allow the Pipeline Safety Supervisor to conduct more inspections. Total start-up cost for moving to a

paperless correspondence process will be \$0.00 as the agency already has the tools in place to accomplish this goal.

Total Cost of Paper Process                      \$3474.40 (per year)

Total Cost of Paperless Process                      -\$1906.67 (per year for tablets)                      -\$2240 (iPads)

SAVINGS to AGENCY                                      \$1567.73 (per year for tablets)                                      \$1234.40 (iPads)

V.      Implementation Plan: Electronic Inspections

The essence of the paperless plan is to relieve the inspectors of the multiple tools that they are currently assigned and replace them with one or two tools so that they can better focus on inspections. In order to effectively execute their assignments, inspectors are currently assigned laptops and air cards through which they access the ORS servers for their inspection reports, access to email and internet, inspection logs, rules and regulations as well as other databases. They are also assigned cameras and cell phones.

The first step of the implementation process was to solicit responses from other states' pipeline safety programs regarding their use of technologies in completing inspection reports (Appendix B) as well as research other industries in which electronic reports were being utilized (Appendix C). It was discovered that several state programs have already moved toward electronic inspection reports. Many programs offered examples of the tablets that they were using as well as any software that may be necessary.

The next step in implementation was to research and decide which tablet may be best for the Program. It was determined that the iPad suited the Program best for two reasons.

First, the Agency already maintained several iPads for employees to use. This allowed for