

Commercialization of Professional Wet Cleaning:

An Evaluation of the Opportunities and Factors Involved in Switching To a Pollution Prevention Technology in the Garment Care Industry

Executive Summary

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Background

This report, “Commercialization of Professional Wet Cleaning,” is one in a series of reports by the Pollution Prevention Education and Research Center evaluating the prospects for pollution prevention in the garment care industry in order to address the significant environmental and health impacts associated with the use of perchloroethylene (PCE or perc), the chemical cleaning solvent used by 85% of all dry cleaners. It is the first study to evaluate the transition from PCE-based dry cleaning to professional wet cleaning by multiple cleaners. The operations of five privately owned and operated dry cleaners who had switched from PCE-based dry cleaning to professional wet cleaning during the past fifteen months were analyzed. Each of the five had received an equipment and training grant as part of the Professional Wet Cleaning Commercialization Project. The Commercialization Project, administered by the Pollution Prevention Education and Research Center at Occidental College, was designed to provide grants to 8 cleaners switching from dry cleaning to professional wet cleaning and to evaluate the outcomes associated with that transition. By increasing the number of dedicated professional wet cleaners in the region, the Project sought to identify whether the establishment of a critical mass of professional wet clean facilities that could serve as demonstration sites would become positive models for the garment care industry as well as create the infrastructure necessary to begin a larger transition towards non-PCE based cleaning methods, including professional wet cleaning.

Methods

The report provides, through the five case studies, a *plant level analysis* that compares the real world conditions for each cleaner in its transition from dry cleaning to professional wet cleaning. Four key factors were evaluated. Owner satisfaction criteria were used to measure the satisfaction of owners who made the switch. Performance criteria addressed whether a professional wet cleaner could effectively clean the full range of garments normally cleaned in dry cleaning. Financial criteria were used to measure whether the one-time cost of equipment and the ongoing operating expenses associated with professional wet cleaning were similar to costs incurred in PCE dry cleaning. The resource impacts of professional wet cleaning compared to PCE dry cleaning were also measured. A *summary level analysis* was then undertaken to compare the experiences of each of the cleaners converting to professional wet cleaning.

Results

Owner Satisfaction: Each of the cleaners indicated that the switch to professional wet cleaning represented a good business decision and would recommend professional wet cleaning to other cleaners who needed to purchase new cleaning equipment.

- The cleaners interviewed were attracted to wet cleaning because unlike PCE dry cleaning it didn't trigger government regulations and there were no health or environmental issues to worry about. In addition, the cleaners were able to obtain information and observe other successful cleaners who had made the transition.
- After switching, cleaners reported greater work satisfaction and would strongly recommend, if asked, that other cleaners also make a switch to wet cleaning. They reported feeling better physically (no headaches or dizziness) and mentally (no stress from PCE regulations) since switching. All the cleaners considered switching a good business decision, which reflects their confidence in the performance quality of wet cleaning and their confidence in the system's financial viability.
- Lack of reliable information on professional wet cleaning led to concerns about performance and labor, and anxiety about using a new cleaning method for cleaners considering switching. Finding a good technician to install professional wet cleaning equipment was a challenge for cleaners who switched.

Performance Assessment: Each of the five cleaners were able to process the full range of garments that had previously been dry cleaned and were able to successfully retain their customer base while switching their cleaning process.

- At each cleaner, more than 62% of garments carry a dry clean label.
- Each of the cleaners was able to successfully wet clean nearly all garments (greater than 96%) brought in by customers.
- For each cleaner, their overall success rate in processing customer garments in wet cleaning was comparable to their success rate as dry cleaners.
- No cleaner reported receiving negative customer responses associated with their switch to professional wet cleaning.
- Each cleaner reported some level of positive response from customers associated with their switch to professional wet cleaning.

Financial Assessment: Operating costs were lower for cleaners in professional wet cleaning compared to when they were dry cleaning.

- Process dependent costs were reduced in professional wet cleaning between \$3.59 and \$17.49 per one hundred garments cleaned.
- While detergent costs were higher in wet cleaning, operating costs that were higher in dry cleaning included equipment, machine maintenance, hazardous waste, regulatory fees, electricity, and natural gas.
- The number of hours worked by employees did not increase for any of the five wet cleaners profiled.

Resource Assessment: Electricity use was substantially lower in processing garments in professional wet cleaning compared to dry cleaning. Natural gas use was somewhat lower, while water use appeared to be comparable or somewhat higher for wet cleaning, dependent on the volume of laundering done.

- Electricity use was between 12% and 46% lower in wet cleaning.
- Natural gas use was between 1% and 36% lower in wet cleaning.
- Water use rose by 17% at one cleaner and fell by 1% at another.

Conclusion

Study results indicate that cleaners switching from PCE dry cleaning to professional wet cleaning can maintain their level of service, reduce their operating costs, and avoid having to comply with complex and potentially onerous PCE regulations and liability concerns. In addition, significant energy benefits are identified. The study also pointed to training, proper installation of equipment and machine programming, and access to demonstration facilities to observe the cleaning process as the primary factors that can facilitate a transition to this new technology.