CASE STUDY

Industry-leading pipeline client

Key facts:

Company:
Industry-leading pipeline company

Headquarters:
United Kingdom

Octave products used:
Tempo Operating Procedures
(AcceleratorKMS)

Procedure compliance directly impacts the bottom line and market leadership. Errors in procedure execution are a significant source of unscheduled downtimes and avoidable losses. According to an ARC Advisory Group study, human error is the cause of 42% of unscheduled downtimes. And of this, 16% is directly attributed to procedural deficiencies.

A Fortune 500 pipeline company contacted the team behind Tempo Operating Procedures to assist with their procedure and training lifecycle audit deficiencies and to enhance the work experience of their control room operators. The current state of procedures and technology at the company's facilities is hindering the efficiency of control room operators' response to time-sensitive tasks. The team started working with the client in Q4 of 2019 to resolve their audit findings and ensure procedures are easily accessible and usable for safe and reliable pipeline operations.

Core problems identified related to procedures:

- Lack of procedure use culture
- Trouble accessing procedures
- Procedures not written to task
- Lack of best writing practices and human performance elements in procedures
- Manual, siloed and opaque governance process

Furthermore, the client was having trouble with procedure management of change and annual review activities. Combined, these issues were limiting the operator and company's ability to transfer material and maximize their pipeline capacities.

"They like Tempo Operating Procedures better than any other tools. Being able to take the procedure offline on their tablet has been really powerful."

Control Room Operator

Tempo Operating Procedures saves the day

An audit revealed gaps in procedure lifecycle management activities that would have resulted in the need for corrective actions and penalties. However, due to the organization signing a contract to implement Tempo Operating Procedures prior to this, it was able to improve procedures and training content before the corrective action needed to be enforced.

During the discovery process, it was understood that source procedures were combined in a single 350+ page Microsoft Word document and hosted in a legacy application that control room operators struggled to access. Sometimes operators spent upwards of 10 minutes finding the right piece of information. This is valuable time lost when responding to emergencies. Additionally, a content audit revealed that the procedures lacked human performance factors and sometimes had technical gaps.

Upon project kick-off it was evident to our information architect that the procedures needed to be split to task, rewritten with human performance factors, in active voice, one action per step, and be made easily accessible. Octave collaborated with the client to identify and publish about 150 task-specific procedures from the 350+ page document and digitized them in the Tempo Operating Procedures solution, leveraging standard templates and statement reuse philosophies. Operators can now find relevant information within few seconds.

Prior to going live, the procedures were reviewed and approved by subject matter experts (SMEs) and supervisors to ensure technical accuracy. When procedures were published and made available to operators, there was tremendous acceptance and adoption in the control room.

Keep reading to find out how improving processes and content helped this organization reduce transient pipeline pressures.

To assist with seamless adoption, the Tempo Operating Procedures team trainer ensured that all control room operators were trained for the task and expectations of procedure use within Tempo Operating Procedures.

The result was much more than fixing audit gaps. This initiative resulted in improved human performance and established procedure use culture, reductions in significant information-

According to a 2020 study, audit expectation gaps negatively affect stakeholders' confidence in the audit.

Source: Existence of the Audit Expectation Gap and its impact on Stakeholders' Confidence - 2020

related incidents and errors, improved response times, and most importantly, the opportunity to negotiate lifting previously imposed pipeline capacity caps.

Changing organizational culture with training and best in class digitization methodology

Traditionally, the organization had trouble with procedure use culture. Tempo Operating Procedures implementation assisted with their vision of establishing procedure use policy and accountability. Executive direction and advocacy on change was critical in elevating organization's performance.

The discovery and alignment session scheduled between the Tempo Operating Procedures team and client teams helped everyone involved to understand the current method of operations, gaps and challenges. This session was followed by an information architecture session during which our team mapped a digital strategy and set standard processes. Key decisions such as setting organizational structures, roles, responsibilities and permissions were agreed to during these sessions. These decisions are critical to a successful digital strategy. For example, roles were standardized to allow for controlled interactions, sign-offs and ability to review and use procedures.

Control room supervisors, lead console operators, system administrators, the procedure lifecycle manager, and project sponsors were part of strategy discussions and to decide on a future vision. Additionally, operators and reviewers underwent training for editing and managing content. This is extremely important for ensuring content is maintained evergreen.

Pipeline operations specialist

Case for lifting restrictions on pipeline capacity

One problem that was not easy for this organization to previously solve was that due to pipeline age (70-years-old) coupled with operating data, it was restricted to 20% capacity. Other organizations with newer pipes typically operate at much higher capacities.

There was a significant improvement year over year in procedure and information related reporting. A study revealed that there was a 54% reduction in corrective actions resulting from problems with training and procedural content as a result of Tempo Operating Procedures deployment.

With less fluid pumping through the pipeline, time and money was being wasted. The capacities were set low to accommodate transient pressures within the pipelines. Transient pressures seen in the pipeline increase the risk of system failure, leading to a possible environmental incident.

However, due to improvements and revisions in procedures and training, this organization decreased transient pressures by 50-65% across 70% of their pipelines. Digitizing procedures to the task, leveraging procedures in training plans, and adopting procedure use culture across the organization were key initiatives leading to this improvement. Training sessions and immediate mobile access for workers were also key and without, this reduction would not have been possible.

Insufficient pipeline capacity has resulted in substantial lost revenue for the energy industry and thus imposed significant costs on the economy as a whole.

Fraser Research Bulletin May 2018 - Elmire Aliakbari and Ashley Stedman

Benefits of Tempo Operating Procedures implementation:

- Procedure lifecycle management activities were identified as industry leading during audit
- 54% reduction in corrective actions from training or procedures
- 50-65% decrease in transient pressures across the system on 70% of the pipelines
- Elimination of corrective action by organization administration
- Procedure and content findability reduced due to metadata and indexing (previously took 2+ hours to find content)
- Field workers using procedures more often
- Hazards being identified and flagged more often

Any organization with pipeline projects facing procedural, training, or transient pipeline issues as a result should meet with a digital transformation expert to discuss the benefit digital procedures, training content, training plans, and assessments can bring to operations.

An industry-leading solution for industry-leading clients

Onward and upward

Since implementation of Tempo Operating Procedures, this organization is still seeing a decrease in corrective actions in training content and procedures, in addition to hazards being identified and flagged more often. The ability to capture lessons learned has also provided this organization with a continual way to identify and capture worker stories that help overall worker safety.

The client also stated that the end-of-year workload was reduced due to built-in tracking and reporting features for procedures and training, in addition to the automated review cycle ensuring content is up-to-date and compliant.

Transient events are usually most severe at pump stations and control valves, in high-elevation areas, in locations with low static pressures, and in remote locations that are distanced from overhead storage.

Hydraulic transient guidelines for protecting water distribution systems, Boulous et al, 2005

It was stated that overall, it was a "remarkable change in how our pipelines are operated, attributed directly to our system [Tempo Operating Procedures] helping them [workers] by providing better procedures and training."

Values created for other clients

25%

Reduction in time to search for training materials

50%

Decrease in time to complete assessments

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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