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Implementation Strategy of Safety Culture in the Technical Service Division of PT PLN (Persero) ULP Pancur Batu

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Abstrak

Penelitian ini bertujuan untuk menganalisis strategi implementasi budaya keselamatan kerja di bidang pelayanan teknik PT PLN (Persero) ULP Pancur Batu guna mendorong kepatuhan karyawan terhadap prosedur operasional standar (SOP) dan menciptakan lingkungan kerja yang lebih aman. Meskipun perusahaan mencatat nihil kecelakaan kerja sejak 2020, angka Unsafe actions oleh teknisi tetap tinggi, yang mengindikasikan perlunya penguatan budaya keselamatan. Penelitian ini menggunakan pendekatan deskriptif kualitatif dengan teknik pengumpulan data melalui wawancara mendalam, observasi langsung, dan kajian dokumen. Analisis data dilakukan menggunakan teknik SOAR (Strengths, Opportunities, Aspirations, Results), yang berfokus pada kekuatan internal dan peluang eksternal untuk merumuskan strategi positif dan terarah. Hasil penelitian menunjukkan bahwa komitmen manajemen, komunikasi antar pekerja, serta keterlibatan aktif teknisi sangat menentukan keberhasilan budaya keselamatan kerja. Strategi yang efektif meliputi penguatan pelatihan rutin, penegakan disiplin, penghargaan bagi karyawan yang patuh terhadap SOP, serta pemanfaatan teknologi untuk pemantauan keselamatan. Penelitian ini merekomendasikan pengintegrasian nilai-nilai budaya keselamatan ke dalam sistem kerja harian untuk mencegah tindakan tidak aman dan mendukung keberlanjutan keselamatan kerja di masa depan.

Kata Kunci: budaya keselamatan kerja; analisis SOAR; strategi K3; pelayanan teknik; PT PLN

Abstract

This study aims to formulate an implementation strategy for occupational safety culture in the technical service division of PT PLN (Persero) ULP Pancur Batu. Although the company has recorded zero occupational accidents since 2020, internal reports indicate a relatively high number of unsafe actions, suggesting the need to strengthen behavioral safety practices. This research employed a qualitative descriptive approach using in-depth interviews, direct observation, and document analysis. Data were analyzed using the SOAR (Strengths, Opportunities, Aspirations, Results) framework to identify strategic priorities oriented toward continuous improvement. The findings show that strong management commitment, structured safety training, effective communication, and digital safety monitoring systems are key organizational strengths. Opportunities include supportive government regulations and rapid technological development in occupational safety systems. The proposed strategies emphasize practice-based safety training, optimization of the Inspekta digital reporting application, reinforcement of safety leadership, and implementation of reward-based safety performance systems. These strategies are expected to reduce unsafe actions and support the development of a sustainable safety culture in technical service operations.

Keywords: occupational safety culture; SOAR analysis; safety strategy; technical services; PT PLN

1. Introduction

Occupational safety and health (OSH) is a critical component of organizational sustainability, particularly in high-risk industries such as the electricity sector. Technical service activities in electricity distribution involve direct exposure to electrical hazards, work at height, installation and repair in public spaces, and operational tasks that often need to be completed under time pressure. These conditions make safety not only a procedural requirement but also a behavioral and cultural necessity. In this context, occupational safety culture becomes a strategic element that determines whether workers consistently prioritize safe behavior in every stage of field activity.

PT PLN (Persero) ULP Pancur Batu is responsible for technical service activities that support the continuity of electricity distribution. The company has demonstrated a positive safety performance by recording zero occupational accidents from 2020 to 2025. However, accident-free performance does not automatically indicate that safety culture has been fully internalized. Internal company reports show that from January to November 2024 there were 20 documented unsafe actions. These actions included not

wearing gloves, not using ladders properly, not wearing work vests, and not placing traffic cones or work-in-progress signs. Although these unsafe actions did not result in accidents, they indicate the existence of latent risks that may threaten workers if they are not addressed systematically.

This condition highlights the difference between safety performance and safety culture. Safety performance is often reflected in measurable outcomes, such as accident rates, lost time injury frequency, or compliance records. Safety culture, on the other hand, refers to the values, beliefs, assumptions, and habitual behaviors that shape how employees interpret and practice safety in daily work. An organization may have formal procedures and adequate safety equipment, yet workers may still violate procedures when supervision is limited or when safety is perceived as an administrative obligation rather than a personal responsibility.

Strengthening safety culture requires more than technical rules. It requires management commitment, clear communication, employee competence, peer accountability, routine reinforcement, and a system that encourages workers to participate actively in identifying and preventing hazards. In technical service work, where crews often operate in dispersed locations, the need for internalized safety values becomes even more important because supervisors cannot directly monitor every task in real time. Therefore, safety behavior must be embedded in the mindset of each technician and supported by a system that makes safe work practical, visible, and measurable.

This study uses the SOAR framework, which consists of Strengths, Opportunities, Aspirations, and Results, to formulate an implementation strategy for occupational safety culture. SOAR was selected because it emphasizes positive organizational potential and future-oriented improvement. Unlike deficit-oriented analysis, SOAR encourages organizations to identify what already works well, explore available opportunities, articulate shared aspirations, and define measurable results. This approach is relevant for PT PLN (Persero) ULP Pancur Batu because the company already has a strong accident-prevention record but still needs to transform compliance into a sustainable safety culture.

Based on this background, the research question of this study is: what strategies can be implemented to strengthen occupational safety culture in the technical service division of PT PLN (Persero) ULP Pancur Batu? The objectives of this study are to identify the strengths and opportunities that support safety culture implementation, formulate aspirations shared by management and employees, determine expected results, and develop a SOAR-based strategic implementation model for reducing unsafe actions and maintaining a sustainable safe working environment.

Table 1. Type of Unsafe Actions

No.	Month	Number of Unsafe Actions	Types of Unsafe Actions	Severity Level
1	January	3	1. Not wearing gloves 2. Not wearing work vest 3. Not placing traffic cones and "Work in Progress" signs	Major
2	February	2	1. Not using a ladder 2. Not wearing gloves	Minor
3	March	2	1. Not using a ladder 2. Not wearing gloves	Minor
4	April	3	1. Not wearing gloves 2. Not using a ladder 3. Not placing traffic cones and "Work in Progress" signs	Major
5	May	1	Not wearing gloves	Minor
6	June	1	Not using a ladder	Minor
7	July	1	Not wearing gloves	Minor
8	August	1	Not using a ladder	Minor
9	September	2	1. Not wearing gloves 2. Not using a ladder	Minor
10	October	2	1. Not wearing gloves 2. Not using a ladder	Major
11	November	2	1. Not wearing gloves 2. Not placing traffic cones and "Work in Progress" signs	Major

This condition indicates that procedural compliance alone is insufficient to ensure workplace safety. A strong occupational safety culture is required to internalize safety values and influence daily work behavior. Safety culture encompasses shared values, beliefs, and practices that determine how safety is managed and prioritized within an organization.

This study seeks to analyze existing safety culture practices and formulate strategic recommendations using the SOAR framework. Unlike deficit-oriented approaches, SOAR emphasizes organizational strengths and aspirations, making it suitable for organizations that already demonstrate good safety performance but aim for continuous improvement.

2. Literature Review

2.1 Occupational Safety Culture

Occupational safety culture refers to the collective values, perceptions, competencies, attitudes, and behavior patterns that influence an organization's commitment to safety management. In a strong safety culture, safety is not treated merely as a written regulation but as a shared value that guides decision making and work behavior. Employees with a strong safety culture tend to remind each other, follow procedures even without direct supervision, and view hazard prevention as a collective responsibility.

Safety culture consists of interrelated dimensions. The psychological dimension includes workers' beliefs, attitudes, and perceptions about safety. The behavioral dimension includes visible actions such as the use of personal protective equipment, compliance with standard operating procedures, and active participation in safety meetings. The situational dimension includes safety policies, availability of equipment, work procedures, supervision systems, and organizational support. These dimensions must operate together; adequate procedures and facilities will not be effective if employees lack awareness and motivation to apply them consistently.

2.2 Determinants of Safety Culture

Several determinants influence the development of occupational safety culture. Management commitment is one of the most important factors because leaders define priorities, allocate resources, and model expected behavior. When supervisors and managers demonstrate visible concern for safety, employees are more likely to perceive safety as a serious organizational value. Conversely, if management focuses only on productivity, employees may interpret safety procedures as secondary.

Worker involvement is also essential. Safety culture becomes stronger when employees are invited to identify hazards, evaluate procedures, and provide feedback on field conditions. In technical service work, technicians often have practical knowledge about real operational risks that may not be fully captured in formal documents. Their involvement helps ensure that safety strategies are realistic and accepted by the workforce. Communication, competency, and participation therefore become key indicators of safety culture implementation.

2.3 Safety Culture Implementations Strategy

The implementation of safety culture requires an integrated strategy that combines leadership, education, enforcement, facilities, technology, evaluation, and collaboration. Leadership support is needed to establish safety as a non-negotiable priority. Education and socialization help employees understand the purpose of rules, not only the content of the rules. Enforcement is required to maintain discipline, while recognition programs can strengthen positive behavior and increase motivation.

In field-based organizations, technological support can improve safety implementation by providing digital reporting, real-time monitoring, and data-based evaluation. Applications such as safety dashboards, online inspection tools, and mobile reporting systems can help supervisors identify unsafe actions more quickly. However, technology must be supported by a behavioral approach. Digital systems should not only function as control instruments but also as learning tools that encourage workers to reflect on hazards and improve their safety practices.

2.4 SOAR Analysis Framework

SOAR is a strategic analysis framework consisting of Strengths, Opportunities, Aspirations, and Results. Strengths refer to internal capabilities that can be used to support organizational development. Opportunities refer to external conditions that can be utilized to accelerate improvement. Aspirations represent the desired future state, while Results refer to measurable indicators that show whether aspirations have been achieved.

In safety management, SOAR is useful because it promotes constructive dialogue and shared ownership. Instead of focusing primarily on weaknesses and threats, SOAR encourages organizations to build strategies based on existing positive resources. For PT PLN (Persero) ULP Pancur Batu, this framework is appropriate because the company already has SOPs, PPE availability, safety meetings, and zero-accident performance. These strengths can be aligned with opportunities such as digital monitoring technology and stronger regulatory awareness to build a more mature safety culture.

3. Research Methodology

This study employed a qualitative descriptive research design to analyze occupational safety culture and formulate implementation strategies in the Technical Service Division of PT PLN (Persero) ULP Pancur Batu. A qualitative approach was selected because the study aimed to understand safety behavior, perceptions, work habits, and organizational practices in their natural setting. The research emphasized meaning, interpretation, and contextual understanding rather than statistical generalization.

The research participants consisted of technical service personnel and relevant organizational actors who were directly involved in safety implementation. The informants included technicians, field supervisors, and safety-related personnel. Informants were

selected purposively because they had experience and knowledge related to technical service operations, safety procedures, and unsafe actions in the field. The main unit of analysis was safety culture implementation in daily technical service work.

Data were collected through semi-structured interviews, direct observation, and document analysis. Interviews were used to explore informants' perceptions of safety rules, management commitment, communication practices, worker involvement, and obstacles to compliance. Observation was conducted to examine actual field behavior, use of personal protective equipment, placement of safety signs, and adherence to standard operating procedures. Document analysis was conducted on relevant safety reports, SOPs, company policies, and records of unsafe actions to strengthen the interpretation of interview and observation data.

The data analysis process consisted of data reduction, data display, interpretation, and strategy formulation. First, interview, observation, and document data were organized according to safety culture indicators, namely top management commitment, safety rules and procedures, worker communication, worker competence, and worker involvement. Second, the findings were classified into the SOAR components: Strengths, Opportunities, Aspirations, and Results. Third, the SOAR matrix was developed by combining Strengths-Aspirations, Opportunities-Aspirations, Strengths-Results, and Opportunities-Results to formulate strategic alternatives.

To improve the credibility of the findings, this study applied triangulation across data sources and collection techniques. Interview findings were compared with observation results and company documents. This process helped ensure that the formulated strategies were not based solely on individual opinion but were grounded in the actual conditions of safety implementation in the technical service division.

4. Results and Discussion

The results show that PT PLN (Persero) ULP Pancur Batu has established several formal elements of occupational safety management, including SOPs, PPE provision, safety meetings, and supervisory mechanisms. These elements have contributed to the achievement of zero occupational accidents from 2020 to 2025. Nevertheless, the presence of unsafe actions in 2024 indicates that safety behavior has not yet been fully internalized by all technicians.

The unsafe actions recorded in company reports mostly relate to non-compliance with basic field safety requirements. The most frequent behaviors were not wearing gloves, not using ladders properly, and not placing traffic cones or work-in-progress signs. These behaviors may seem routine, but in electrical technical service work they can increase the probability of injury, electrical contact, falling, or accidents involving the public. Table 1 presents the documented unsafe actions from January to November 2024.

Table 1. Unsafe Actions Recorded in the Technical Service Division in 2024

No.	Month	Number of Unsafe Actions	Types of Unsafe Actions	Severity Level
1	January	3	Not wearing gloves; not wearing work vest; not placing traffic cones and work-in-progress signs	Major
2	February	2	Not using a ladder; not wearing gloves	Minor
3	March	2	Not using a ladder; not wearing gloves	Minor
4	April	3	Not wearing gloves; not using a ladder; not placing traffic cones and work-in-progress signs	Major
5	May	1	Not wearing gloves	Minor
6	June	1	Not using a ladder	Minor
7	July	1	Not wearing gloves	Minor
8	August	1	Not using a ladder	Minor
9	September	2	Not wearing gloves; not using a ladder	Minor
10	October	2	Not wearing gloves; not using a ladder	Major
11	November	2	Not wearing gloves; not placing traffic cones and work-in-progress signs	Major

4.1. Inconsistent Compliance with SOP

Although SOPs were available and generally understood by employees, compliance in the field was still inconsistent. Some technicians tended to simplify procedures when tasks were considered routine or short in duration. Time pressure and the desire to complete work quickly encouraged workers to prioritize task completion over full safety preparation. This finding indicates that the existence of SOPs alone is not sufficient if workers do not perceive safety procedures as essential to their work identity.

The repeated occurrence of not wearing gloves and not using ladders suggests that unsafe behavior may have become normalized in certain work situations. When unsafe shortcuts do not immediately result in accidents, workers may develop a false sense of safety. This condition is dangerous because it weakens risk perception and reduces sensitivity to hazards. Therefore, safety culture strengthening should focus on changing habitual behavior, not only on reminding employees about formal rules.

4.2. Weak Internalization of Safety Values

The study found that safety programs and campaigns had been implemented, but some employees still viewed safety requirements as administrative obligations. In this situation, compliance tends to occur when employees are being inspected or supervised. Once supervision decreases, the possibility of unsafe actions increases. This indicates that safety values have not been fully internalized as personal responsibility.

Internalization can be strengthened through leadership modeling, peer reminders, repeated practice, and positive reinforcement. Safety messages should be connected to workers' real experiences and risks faced in the field. When technicians understand that PPE, ladders, signs, and traffic cones protect not only themselves but also coworkers and the surrounding community, safety can become more meaningful and personally relevant.

4.3. Limited Real-Time Supervision

Technical service activities are carried out in dynamic and dispersed field locations. This makes it difficult for supervisors to observe all activities directly and continuously. Supervisory visits are often periodic, while unsafe actions may occur between inspection schedules. As a result, workers sometimes rely on personal judgment in applying safety standards.

The lack of real-time supervision creates an opportunity for digital safety monitoring. Mobile-based reporting, photo documentation before work, GPS-linked activity confirmation, and digital checklists can help supervisors verify safety compliance remotely. However, the implementation of digital supervision should be designed as a supportive mechanism rather than a punitive tool. If used wisely, digital monitoring can improve accountability, provide learning data, and reduce repeated unsafe actions.

4.4. Positive Factors Supporting Safety Culture

Despite the challenges, several positive factors support the development of a stronger safety culture. The company has SOPs, adequate PPE, safety signage, routine safety briefings, and workers who generally understand the importance of safety. Management commitment is also reflected in the provision of facilities and the maintenance of zero accident performance.

These positive factors are important strengths. They provide a foundation for moving from compliance-based safety toward values-based safety. Instead of starting from a lack of system, PT PLN (Persero) ULP Pancur Batu can build on existing systems and improve behavioral reinforcement, participation, and data-based monitoring. This is consistent with the SOAR approach, which focuses on using strengths and opportunities to achieve aspirational safety results.

4.5. SOAR Analysis Output

The SOAR analysis summarizes the internal and external conditions that can be used to strengthen safety culture implementation. The analysis does not only identify organizational resources, but also links them to aspirations and measurable results. Table 2 presents the SOAR components and their strategic meaning.

Table 2. SOAR Analysis of Occupational Safety Culture Implementation

SOAR Component	Key Findings	Strategic Meaning
Strengths	Availability of SOPs, adequate PPE, structured technical teams, safety briefings, and management commitment	These strengths can be used as the foundation for behavioral reinforcement and consistent safety practice.
Opportunities	Development of digital monitoring, safety dashboards, mobile reporting, and stronger stakeholder awareness of OSH	Technology and external support can improve real-time supervision and data-based evaluation.
Aspirations	Embedded safety behavior, active technician participation, and achievement of zero unsafe actions	Safety should become a shared value and not merely a formal compliance requirement.
Results	Decreased unsafe actions, improved safety perception, stronger reporting discipline, and sustainable zero accident performance	Measurable indicators are needed to evaluate whether safety culture strategies are effective.

4.6. Strategic Implementation Model

The SOAR matrix produces several strategic alternatives. The Strength-Aspiration strategy focuses on using existing SOPs, PPE availability, and management support to build a shared vision of safety excellence. This can be implemented through routine practice-based safety training, leadership involvement in toolbox meetings, and the use of senior technicians as safety role models for junior workers.

The Opportunity-Aspiration strategy focuses on using digital technology and external safety support to accelerate the internalization of safety values. PT PLN (Persero) ULP Pancur Batu can optimize digital inspection applications, develop simple real-time reporting dashboards, and collaborate with safety experts or related agencies to improve training quality. This strategy helps ensure that safety aspirations are supported by modern monitoring and learning tools.

The Strength-Result strategy emphasizes the conversion of internal strengths into measurable outcomes. For example, every toolbox meeting can be followed by a checklist of PPE use, ladder readiness, traffic cone placement, and work-sign installation. The results can be recorded monthly to measure changes in unsafe actions. Reward mechanisms can also be given to teams that consistently achieve safe behavior targets.

The Opportunity-Result strategy connects external opportunities with measurable performance indicators. Digital monitoring can generate data on repeated unsafe actions, location patterns, and compliance trends. These data can be used for monthly

evaluation, targeted coaching, and management decision making. The expected results include a decrease in unsafe actions, increased reporting discipline, improved safety perception, and sustained zero accident performance.

Based on these strategies, the proposed implementation model consists of four stages. The first stage is safety awareness reinforcement through leadership communication and practice-based training. The second stage is behavioral monitoring through field checklists and digital reporting. The third stage is reinforcement through coaching, discipline, and appreciation for compliant behavior. The fourth stage is evaluation through monthly review of unsafe action trends and continuous improvement of safety procedures. These stages should be implemented continuously so that safety culture becomes embedded in daily operations.

4.7. Discussion

The findings of this study confirm that a zero-accident record should not be interpreted as the absence of safety risk. Unsafe actions are early warning indicators that must be managed before they develop into incidents or accidents. In the case of PT PLN (Persero) ULP Pancur Batu, the safety management system has succeeded in preventing accidents, but behavioral safety still requires stronger reinforcement.

The main challenge is the gap between formal compliance and cultural internalization. Workers may know the rules but not always apply them consistently. Therefore, the implementation strategy should combine structural and behavioral approaches. Structural approaches include SOPs, PPE, supervision, and digital reporting. Behavioral approaches include leadership example, peer accountability, safety communication, participation, reward, and repeated practice. The integration of both approaches is necessary to create sustainable safety culture.

The SOAR framework provides a positive and constructive way to formulate safety strategies. By focusing on strengths, the organization can appreciate existing achievements such as zero accidents and adequate safety facilities. By identifying opportunities, the organization can develop technology-based supervision and external collaboration. By formulating aspirations and results, safety culture development becomes clearer, more participatory, and measurable.

5. Conclusion

This study concludes that the implementation of occupational safety culture at PT PLN (Persero) ULP Pancur Batu can be strengthened through a SOAR-based strategy that leverages existing organizational strengths and external opportunities. Although the company has maintained zero occupational accidents from 2020 to 2025, the presence of 20 unsafe actions in 2024 shows that safety values have not been fully internalized in daily field behavior.

The main strengths identified in this study include the availability of SOPs, adequate PPE, structured technical teams, routine safety briefings, and management commitment. The main opportunities include the use of digital technology, real-time reporting, stakeholder awareness, and collaboration with external safety experts. The aspiration of the organization is to embed safety as a shared value and achieve zero unsafe actions, while the expected results include reduced unsafe behavior, improved safety perception, stronger reporting discipline, and sustained zero accident performance.

The recommended strategies include strengthening practice-based safety training, optimizing digital supervision systems, increasing leadership visibility, improving peer accountability, implementing monthly evaluation of unsafe actions, and providing recognition for employees or teams that consistently comply with safety procedures. These strategies should be implemented as an integrated cycle of awareness, monitoring, reinforcement, and evaluation.

The practical implication of this study is that PT PLN (Persero) ULP Pancur Batu needs to move from a compliance-based safety approach toward a values-based and participatory safety culture. Future research may expand the scope to other PLN units and apply mixed methods to measure the relationship between safety culture maturity, unsafe actions, and accident prevention more comprehensively.

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