

Use Cases of Specific Initiatives Leading to Vision Zero Promotion and ISO 45001 certification, Which Proved Effective in Building a Safety Culture

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FOREWARD

The IDEC Group has set the goal of "becoming the world's leading company in pursuing and realizing safety, anshin (peace of mind), and well-being." Since its founding, it has been working on developing safety technologies, fostering safety personnel, improving on-site occupational safety and health, and actively participating in international standardization activities related to safety. In particular, the company is actively promoting Vision Zero activities, an initiative for occupational safety and health that has been spreading in the global society. IDEC became the first company from Japan to join Vision Zero campaign in 2018.

Vision Zero, a global campaign initiated by the International Social Security Association (ISSA) in 2017 at the 21st World Congress on Safety and Health at Work in Singapore is a transformational approach to prevention that integrates the three dimensions of safety, health and well-being at all levels of work. It is based on the assumption that all accidents, harm and work-related ill-health are preventable [1].

As one of its concrete activities, IDEC has promoted the acquisition of certification for the ISO 45001 Occupational Health and Safety Management System at all of its domestic production sites. After acquiring certification at its main Takino site in 2019, it expanded the initiative, achieving certification at all domestic production sites (5 sites) by 2022, and is currently expanding it to overseas sites as well. In this paper, we will report on the "particularly effective activities" along with case studies from among the various activities aimed at building a "higher-level safety culture" that IDEC has been practicing under its Vision Zero activities, while also utilizing the ISO 45001 standards.

1 BUILDING A SAFETY CULTURE

At IDEC, we believe that safety culture evolves through four stages, as shown in Figure 1 [2].

Stage 1 is the reactive stage, where action is only taken after an accident occurs.

Stage 2 is the dependent stage, where activities are carried out based on a supervisor's instructions.

Stage 3 is the proactive stage, where individuals take action on their own initiative.

Stage 4 is the team learning stage, where colleagues mutually inspire and learn from each other.

We are particularly striving to reach Stage 4, the "interdependent stage where colleagues mutually inspire and learn from each other." The cornerstone of this effort is the Vision Zero activities that pursue safety, health, and well-being. As mentioned earlier, Vision Zero participants can gain a sense of anshin (peace of mind), motivation, achievement, and self-realization through these activities, leading to the voluntary promotion and continuation of activities. For the organization, this can lead to increased productivity, realizing the shift from "negative to positive." [3-4] This positive impact is expected to create a virtuous cycle of further activating these activities. Figure 2 outlines conceptual idea of Positive Safety by human's physical and psychological attributes. The Vision Zero activities have seven Golden Rules, and for each rule, there are 13 to 21 questions (a total of 110 questions) as shown below [5].

1. Take leadership – demonstrate commitment	19 questions
2. Identify hazards – control risks	15 questions
3. Define targets – develop programmes	13 questions
4. Ensure a safe and healthy system – be well-organized	21 questions
5. Ensure safety and health in machines, equipment and workplaces	14 questions
6. Improve qualifications – develop competence	14 questions
7. Invest in people – motivate by participation	14 questions

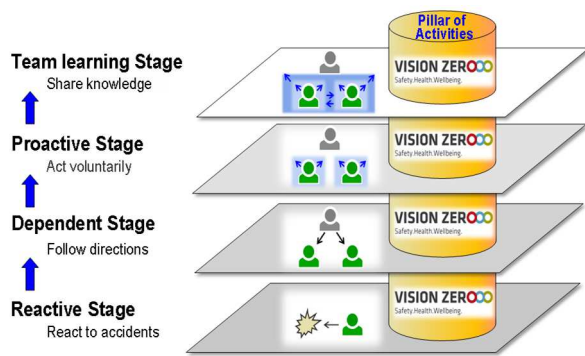


Figure 1. Evolution of Safety Culture

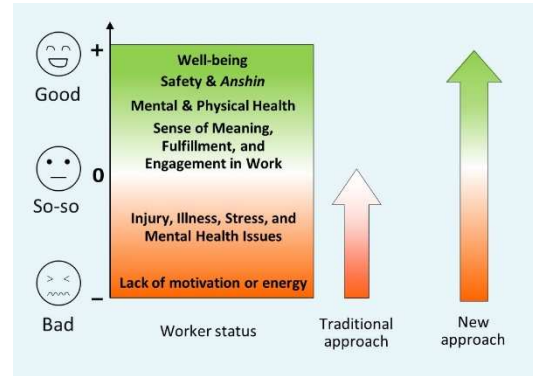


Figure 2. Conceptual image of Positive Safety

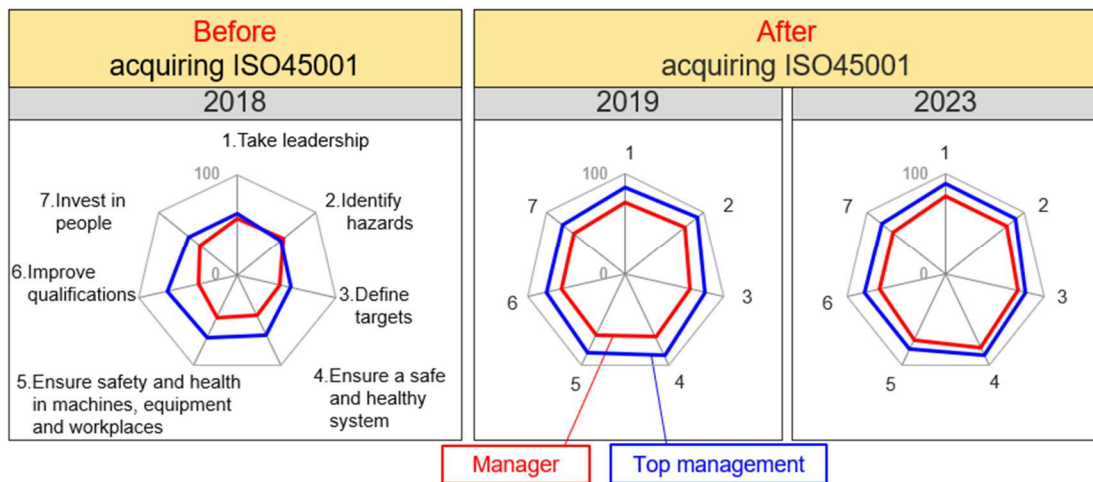


Figure 3. Vision Zero 7 Golden Rules Self-Check Results, Before and After Acquiring ISO45001

At IDEC, from the very start of promoting Vision Zero activities, we have scored and graphed the achievement level of these questions and treated it as one of the indicators for evaluating the results of our annual occupational health and safety activities [6]. The subjects whose achievement levels are measured extend beyond just the top managers to include on-site managers who provide guidance and promote these activities. At the end of each fiscal year, we obtain their responses in the form of a questionnaire, and the results are shown in the graph (Figure 3). The blue line represents the top management team, while the red line represents the on-site managers. For all seven items, the achievement levels have improved year over year as we continue the Vision Zero activities. However, there is a gap in achievement levels between the management team and the on-site managers. We analyze that this gap exists because the on-site managers, who are well-acquainted with the actual situations, tend to evaluate the achievement levels more strictly. Nonetheless, this gap is gradually narrowing through the continuation of various activities and the review of activity contents. We believe the positive effects are becoming more apparent on-site as well.

2 EFFECTIVE ACTIVITY EXAMPLES FOR BUILDING A SAFETY CULTURE

2.1 Top Commitments as Crucial Element

Promoting Vision Zero activities requires top leadership, which is the most crucial element and the primary driving force behind building a safety culture. An example of leadership from management executives at IDEC is the declaration of the "Safety Policy." This policy not only emphasizes the pursuit of employee safety but also aims to contribute to the safety of society through its operations. Another example is the communication of messages to employees by IDEC's management executives. They personally communicate messages about safety principles and specific goals through intranet platforms and internal newsletters. Additionally, as a demonstration of leadership, IDEC conducts various activities and opportunities such as quarterly comments on the effectiveness of the annual safety and health plan, mandatory participation of executives in safety and health committees, facility inspections, and message dissemination at various meetings throughout the year.

2.2 Utilization of Vision Zero 7 Golden Rules as KPIs

The self-check results of the Vision Zero 7 Golden Rules serve as one of the indicators for evaluating overall activity. Currently, they are also set as Key Performance Indicators (KPIs) with a target of achieving a score of "95 or above" by the end of fiscal year 2025 (March 31, 2025). Figure 4 depicts the annual score trends for each manufacturing site, with the top row representing the average of all sites and the following rows showing the trend for each individual site. Initially, all sites saw rapid improvement after the start of activities (OHSMS implementation), followed by steady expansion. However, in recent years, there has been a plateau in performance. This trend has been analyzed in detail by examining the results data of each of the 7 Golden Rules, confirming differences based on departments, sections, or variations in job types and tenure. It's understood that the turnover from management and frontline leadership directly involved in OHSMS construction to subsequent generations has had a significant impact. Based on this analysis, adjustments have been made to the content of education at various levels and methods of sharing information on implemented activities for future activities. Thus, the self-check activity of the Vision Zero 7 Golden Rules not only evaluates the results of activities but also serves as important data for evaluating and analyzing detailed data to consider improvements for the next fiscal year's activities.

2.3 Introduction of Management System "ISO45001" as Part of Vision Zero Initiative

We have been actively promoting the acquisition of certification for the Occupational Health and Safety Management System (OHSMS) ISO45001, as mentioned earlier. Currently, we have completed ISO45001 certification acquisition at five domestic manufacturing bases and are expanding to overseas manufacturing bases. In establishing and expanding domestically, we have set up a specialized department to promote Vision Zero activities. Initially, based on existing activities, we implemented ISO45001 facilitation and certification acquisition at the first site and then expanded to other sites using the knowledge gained from this facilitation. During this process, the nationwide deployment plan for ISO45001 facilitation and certification acquisition was shared with all sites in advance. During the facilitation of the first site, key members from other sites also participated, and they continued to be involved as core personnel during the deployment of each site. As a result, while distributing the facilitation load across all sites, we achieved certification at five sites over the four-year period from fiscal year 2018 to fiscal year 2021.

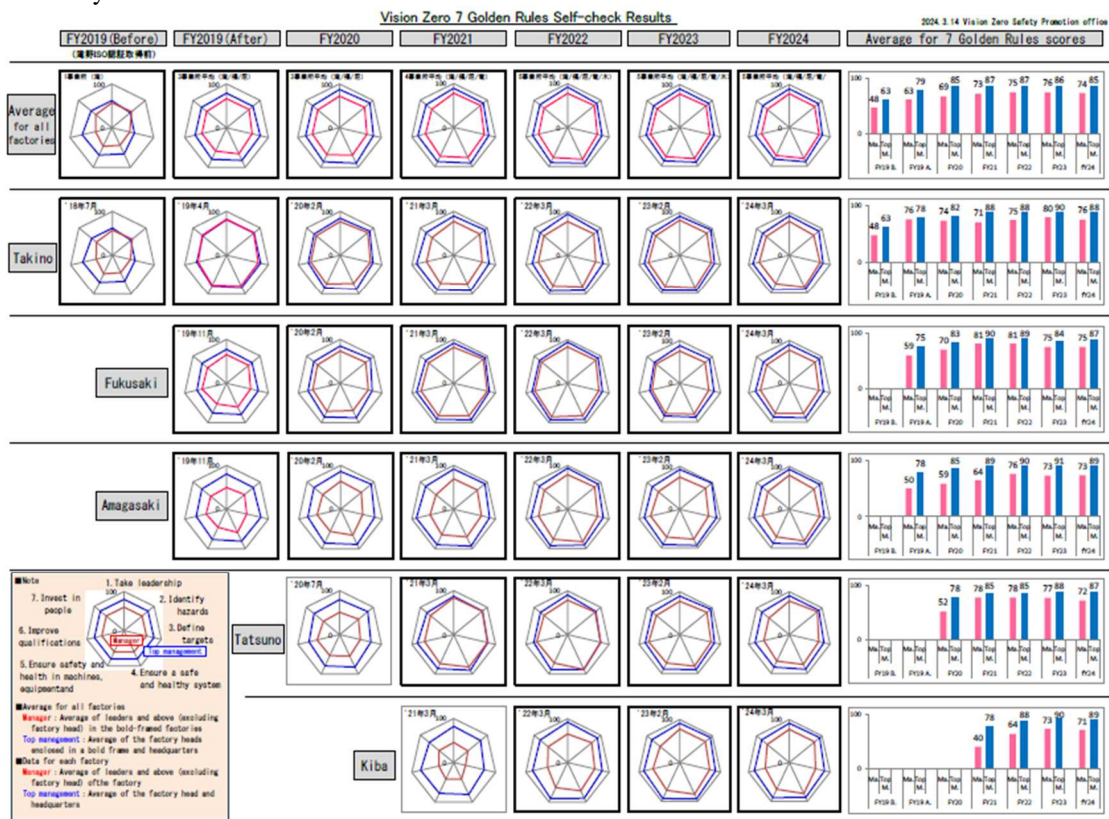


Figure 4. Vision Zero 7 Golden Rules Self-Check Results of each Manufacturing Site

2.4 Activity to Respect Employees' Voices with Full Participation

Among the various activities mentioned in the preceding section, two activities are particularly important and are also utilized as indicators of the level of activity in safety initiatives. These are:

- Risk awareness reporting activity
- Risk assessment activity

First, as an initiative that involves full participation and respects the voices of employees, we present the "Risk awareness reporting activity." At the worksite, there are many underlying issues, and what supervisors can discover is just the tip of the iceberg. The risk awareness reporting activity aims to extract hidden problems that only those who have performed the work can notice. It differs from a typical suggestion system in the following ways:

1. Employees tweet (post very short messages) what they have noticed at the worksite (related to safety, quality, productivity).
2. It is not necessary to always include countermeasures or solutions for the noticed issues.
3. Immediate supervisors must always include words of gratitude when receiving the reports.
4. Accepted suggestions are to be considered and documented within two weeks at the latest and posted on a dedicated bulletin board visible to everyone. If more time is required for consideration and action, feedback on the status of consideration must be provided to the reporter within two weeks to ensure their understanding.
5. Executives at the level of department heads or higher also review the posted awareness reports and leave expressions of gratitude and comments.
6. To achieve full participation, the reporting is performed in multiple languages.

The sense of tweeting "awareness" is crucial, lowering the threshold for reporting, and with gratitude and prompt responses from immediate supervisors and executives, reporters feel "acknowledged" and "respected," fostering voluntary participation and continuity in this risk awareness reporting activity. Similar positive impacts are observed in other activities as well. (Figure 5)

Next, the second activity involves risk assessment, in which personnel at the worksite participate.

IDEC's risk assessment activity utilizes a format that allows for a quick understanding of the process, including current analysis, risk assessment, formulation of improvement proposals, and re-evaluation of risk countermeasures, with the addition of photos. The format deliberately evaluates risks using two parameters: severity of injury and occurrence frequency (likelihood), ensuring it is "easy to fill out, easy to understand, and easy to use." Furthermore, solutions are found through cross-functional team discussions, fostering a culture of mutual learning within the organization. As a result, as depicted in Figure 6, the risk assessment activity is sustained at a high level, contributing to the reduction of risks in the workplace.

2.5 Personnel Development Activities to Enhance Individual Competence and Motivation

In the establishment of a "safety culture," personnel development plays a crucial role. Especially to achieve the fourth stage we aim for, where "colleagues inspire and learn from each other," it requires not only qualifications and education mandated by laws and regulations but also a wide range of knowledge and skills including risk assessment, risk mitigation measures, daily safety and hygiene activities, emergency response, internal audits, and the ability (competence) to apply such knowledge and skills in practice. While we systematically manage qualifications and education according to the hierarchy and job functions (roles) within the organization, here, we

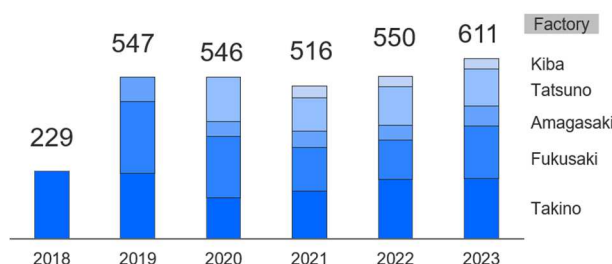


Figure 5. Number of Risk Assessment

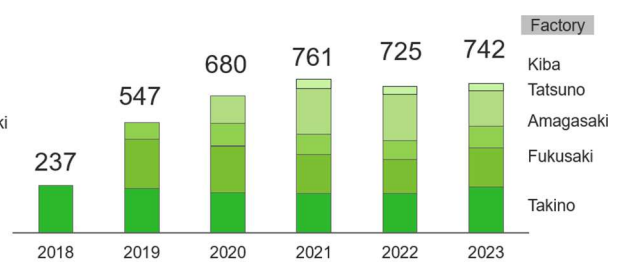


Figure 6. Number of Risk Awareness Report

introduce two personnel development activities that encourage employee participation and enhance individual competence and motivation through practical application.

2.5.1 Recommendation of Safety Assessor Qualification Acquisition

In safety activities, the knowledge of machinery safety is recognized as essential not only for the consideration of introducing new equipment but also for operations and activities outside of equipment-related tasks. Therefore, we recommend the Safety Assessor qualification, a third-party certification, to staff involved in technical and safety-related tasks. Since the Safety Assessor qualification offers opportunities for advancement, we encourage managers of departments using equipment on the ground and leaders in risk assessment to obtain the Safety Basic Assessor qualification, a machinery operation safety qualification within the Safety Assessor qualification system. After obtaining this qualification, we further recommend obtaining higher-level certifications to provide a mechanism for individuals to experience personal growth. The number of employees obtaining this certification has been increasing each year (Figure 7), and the target audience will be expanded from frontline leaders, aiming for overall improvement of employee competence. For executives, managers, and staff, we encourage the acquisition of the Safety Officer qualification, which enables learning about the basics of safety and the improvement of well-being and contributes to practical guidance in daily activities.

2.5.2 Providing a Practice Space for "Mutual Learning" in Internal Audit Activities

In ISO45001, internal audits are mandatory. However, being audited by colleagues within the same department tends to create negative feelings for the auditees, and auditors, especially when they are peers, may hesitate to make criticisms. Therefore, we have regarded internal audits themselves as a practical space for achieving the fourth stage of the safety culture we aspire to, where "colleagues inspire and learn from each other," and have aimed for proactive internal audits. Auditors are selected primarily from the same site, and we utilize pre-audit meetings and post-audit reviews not only during auditor training but also to repeatedly share the principles of "teaching each other," "expressing gratitude and utilizing improvement suggestions," and "ensuring auditors find positive aspects." As a result, the number of internal audit reports each year (including good practices and proposed suggestions) amounts to approximately 100 cases, contributing to the improvement of safety and health levels across all workplaces through their implementation and sharing. To expand this audit experience ("experience of colleagues inspiring and learning from each other"), we are systematically planning for regular rotation of auditors. Similarly, this "mutual" approach is being promoted through various activities such as workplace patrols conducted by ordinary employees and the appointment of internal personnel as instructors in safety and health education.

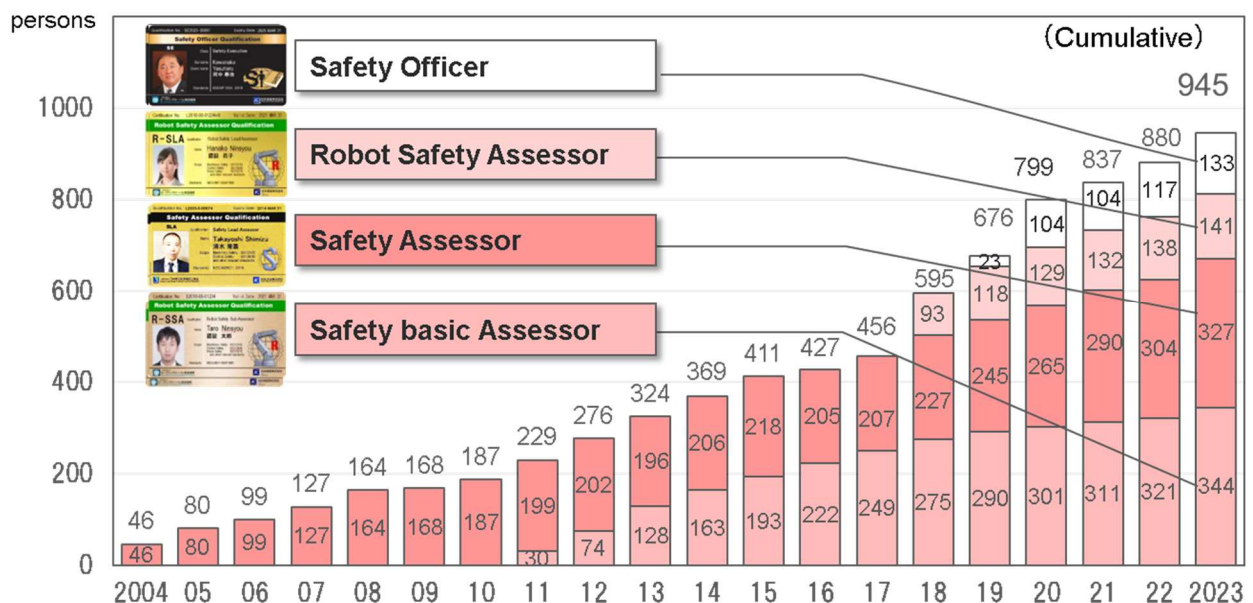


Figure 7. Cumulative Number of Individuals Holding Safety Assessor Certifications

3 CONCLUSION

To invigorate daily safety and health activities in manufacturing sites, fostering a "prevention culture" within the organization is crucial, and Vision Zero plays a significant role as its guiding principle. We will continue to prioritize Vision Zero activities, aiming not only for the creation of safe workplaces but also for initiatives that enable everyone to achieve personal growth and fulfillment through acquiring high-level skills and utilizing them. Our commitment is to promote efforts towards realizing safety, anshin, and well-being.

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