

# Seven Principles for Building an Effective, Sustainable NEAR-MISS MANAGEMENT SYSTEM

By Jean Ndana

**Wouldn't it be great to have a system in place to stop workplace injuries, fatalities and equipment damage situations before they occurred? If your organization has developed and rolled out an effective and efficient near-miss management system (NMMS), it has taken an important step toward achieving that goal.**

**An effective and efficient** NMMS is beneficial for incident prevention and safety improvement in general. Near-miss reporting and analysis, and the implementation of adequate corrective measures based on investigation results, can prevent the recurrence of near misses and incidents. OSHA and the National Safety Council Alliance state, "History has shown repeatedly that most loss producing events (incidents), both serious and catastrophic, were preceded by warnings or near-miss incidents. Recognizing and reporting near miss incidents can significantly improve worker safety and enhance an organization's safety culture" (NSC, 2013, p.1).

In many cases, an effective NMMS has led to productivity improvement by eliminating or at least minimizing incident-related disruptions. However, despite the benefits and opportunities that an NMMS provides, some organizations have difficulty developing and implementing an effective NMMS. A main reason is that standard models lack frameworks for designing practical NMMSs, and there is an inadequate solutions orientation. Consider the construction of a building. An architect typically draws a blueprint, which serves as the pattern and guide. A building is not well built without a solid blueprint. Frameworks and standards serve the same purpose.

Similarly, wouldn't it be ideal for occupational environmental, health and safety (EHS) practitioners to have a blueprint for building an effective and successful NMMS?

## Case Study

Upon joining a 350-person round-the-clock plant specializing in manufacturing motor vehicle steering and suspension components, the author found that the plant had implemented a near-miss program. However, the program was not well structured, had no real goals in place, and did not generate meaningful workplace safety gains. It seemed that management established it for the sake of having a near-miss

program. What constituted a near miss was not clear in everyone's mind. Most frontline workers and even supervisors viewed some near misses as too minor and inconsequential to report as safety and health issues.

There were deeper problems, including dysfunctional perspectives of the NMMS. When the NMMS had been rolled out, insufficient attention was paid to limiting beliefs or views held by workers. Workers did not want to be embarrassed, look bad (especially with unreported slips, trips and falls) or be blamed for a near miss. Many frontline supervisors viewed near-miss reports as a sign of poor supervision. Because of these dysfunctional perspectives and the lack of results, and especially because little feedback was given to the individual that reported a near miss, the program earned the moniker, "the missing system." Most people interviewed said it seemed that when a near miss was reported, it entered a kind of organizational black hole never to be seen or heard from again.

A few months later, after gaining requisite knowledge of the operations and people, the dysfunctional and

underperforming NMMS was revamped. Tailor-made initiatives were developed and implemented. What was once a dysfunctional and underperforming reporting process that required time-consuming paperwork and red tape was streamlined to be quick, easy and efficient with opportunities to provide feedback and highlight results. A new and customized definition of "near miss" was developed and communicated throughout the plant to reduce confusion. Reported near-misses were reviewed as soon as possible, and follow-up information about the situation or condition was communicated back to the reporting individual, further emphasizing the company's due diligence. The NMMS ceased to be the missing system and instead became a vital component of the safety and health management system that positively transformed the plant.

This transformation resulted in not only the metamorphosis of the physical work environment but also (and more importantly) workers assuming substantial responsibility for their own workplace safety and health and a significant reduction in incidents and injuries. The facility's OSHA incidence rate dropped dramatically to 3.2, half of the industry average at the

## STEPS TO IMPROVING NEAR-MISS MANAGEMENT

- **Define and train for near-miss identification.** Clearly define what constitutes a near miss and provide practical, ongoing training so all employees can recognize and report them confidently.
- **Make reporting quick and easy.** Simplify the near-miss reporting process using accessible, colorful forms or digital tools, and offer several different convenient ways to report.
- **Foster motivation through culture and recognition.** Build a strong safety culture by treating employees respectfully, acting swiftly on reports, and recognizing or rewarding contributions to safety.
- **Take timely and visible corrective actions.** Prioritize reported near misses, assign clear ownership and set deadlines to ensure prompt, effective follow-through.
- **Communicate progress and outcomes.** Keep employees informed about actions taken, improvements made and how their input directly contributed to a safer workplace.
- **Sustain and nurture the system.** Maintain momentum by regularly evaluating the near-miss management system, refreshing training, involving workers in solutions and reinforcing the system's value over time.

time. In other words, in 2 years, the company's injury rate decreased by 75%.

In a unionized manufacturing plant, how can an EHS professional turn around a poorly performing NMMS in a relatively short period? This article proposes a practical framework based on real-world experiences with building successful and sustainable NMMSs that can be used by EHS professionals. This involves a practical, cost-effective and easily understood step-by-step road map. This article discusses the anatomy of an effective NMMS, which is broken down into six steps. Next, the article explores how these six steps can be transformed into a practical framework that can build an effective and successful NMMS or successfully revamp an existing one. The framework consists of seven principles of NMMS building:

- 1) Make it visible.
- 2) Make it rewarding.
- 3) Make it easy.
- 4) Fix it in a timely manner.
- 5) Make it effective.
- 6) Publicize it.
- 7) Nurture it.

## The Anatomy of an Effective & Successful NMMS

Based on the author's experience, the six-step process of building an effective NMMS includes: 1) identify, 2) own, 3) report, 4) act, 5) communicate and 6) sustain. Breaking it down into these fundamental parts can help EHS professionals understand how to develop and roll out an effective and sustainable NMMS or improve an existing one that is not producing the expected results. If an EHS professional understands these six steps, referred to as the near-miss cycle, they not only understand how an effective NMMS works but also have six places to intervene. View them like six levers that an EHS professional can pull to increase the chances of building an effective and successful NMMS.

### 1) Identify

It is impossible to manage near misses and learn from them unless you know they are occurring. First, the observer of the near miss must be able to identify or recognize it as a near miss. An effective NMMS is designed to transform employees, from the CEO to new hires, into hunters. This is accomplished through continuous training, teaching, coaching, collaboration, empowerment and learning about the NMMS focus. All employees who venture

out to the production floor, loading dock, maintenance shops, and other areas of the workplace become hunters and specifically look for near misses.

### 2) Own

Next, the observer of the near miss must own the near miss, meaning that they must be motivated or inspired to act and actually do something about it. Without some level of motivation, ownership or desire, they have no reason to act. What motivates or inspires the observer to do something is not the near miss itself but the anticipation of positive repercussions, meaning the observer's thoughts, feelings and confidence that a positive change or outcome (e.g., preventing harm, making coworkers' jobs safer or easier, making the workplace look safer, better, healthier) will result if they do something about the near miss they have witnessed. Any near miss is meaningless until it has been interpreted as an opportunity to prevent harm, learn, improve or make things better, safer and healthier. In organizations that incentivize near-miss reporting, or where employees are recognized or rewarded for reporting near miss, that possible recognition or reward can be an additional or the only motivating factor.

### 3) Report

The next step is reporting, or bringing the near miss to management's attention. Once a near miss has been identified and owned, it should be reported in writing either electronically or on paper by the person who identified the near miss or the supervisor who was told about the incident. It is important that workers be given a way to report anonymously.

Whether a motivated and inspired observer reports a near miss that they identified depends on many factors such as:

•**Organizational safety culture.** Does the organization have a culture that strongly supports or encourages near-miss reporting through timely and effective corrective actions, feedback, sharing of information and lessons learned, recognition and reward?

•**Friction associated with the reporting process.** If reporting requires more physical or mental effort than the observer is willing to expend, then they will not report it. Human beings in general are highly sensitive to effort expenditure.

•**The employee's abilities.** The skills and capabilities of the employee also play a role in whether they report a near miss.

### 4) Act

Once a near miss has been reported, management must act in a timely and effective manner to address it (e.g., analyzing the root causes and determinants of the reported near miss and devising and implementing an appropriate solution), learning from it and improving the workplace. Taking action is the main reason near misses are reported in the first place. The most sophisticated NMMS is pointless without management acting upon reported near misses.

### 5) Communicate

Effective communication throughout the life cycle of a near miss is vital when building a successful and effective NMMS. Figuratively speaking, the "birth" of a near miss is when it is reported, and its "death" is when it has been acted upon. Do not wait until its death before communicating about it. Based on the author's experience, this is a mistake many EHS professionals make. Regular and timely communication of information must take place throughout the near-miss life cycle, especially in a useful and understandable format about actions taken to address a reported near miss. Keep the worker who reported the near miss and any employees who helped fix or correct it updated on progress and actions taken (e.g., engineering or administrative controls, training, new and updated policies and procedures) to improve workplace safety because of the reported near miss. It is important to keep these people informed about the positive change deriving from them reporting the near miss in the first place. Let them know that because of their action, potential harm to coworkers, property or the environment has been avoided, and the workplace has become safer, healthier or better.

### 6) Sustain

As an EHS professional, once the NMMS is implemented, it is tempting to think the work is done. However, an effective and successful NMMS is first and foremost a system, and like any system, it does not keep running on its own. The nontechnical explanation of entropy, the second principle of thermodynamics, says that systems tend to gradually slide from order into disorder.

It is crucial to keep an eye on the system after initial setup. An NMMS must be nurtured, receiving regular care and attention to work properly and produce expected results. Building an effective

NMMS is like cultivating a delicate flower; as the previous steps are repeated, the system sprouts and grows stronger.

If an NMMS is insufficient in any of the six stages, it will not become an effective one. To recap, a near miss must be identified or recognized by an observer. Then the observer must be inspired or motivated to do something about it. Once motivated, the observer must report it, bringing it to management's attention. Once management is aware of the near miss, they must act. Throughout the resolution process and the life cycle of the near miss, management must communicate to employees about it. Once the near miss has been addressed, it is not over; the system must be maintained and sustained.

These six steps can be split into three phases: identification, solution and sustainability (Table 1). It is worth noting that the two steps in the solution phase should happen simultaneously for the maximum positive effect (Figure 1).

The purpose of any effective and successful NMMS is detecting and addressing near misses before they escalate into bigger problems or failures. Near misses are inevitable in complex systems such as in manufacturing environments or construction sites. However, large-scale problems, failures, tragedies, disasters and catastrophes generally do not happen overnight but are the accumulation of little issues that are ignored, inaccuracies that are brushed aside, or early warnings of potential problems that are neglected. As time passes, these small errors, mistakes, issues or inaccuracies balloon into bigger ones.

**The Seven Principles of NMMS Building**

To make them useful to EHS professionals, the six steps of the near-miss cycle must transform into a practical framework they can use to develop and roll out a successful and effective NMMS. This framework, which the author proposes as the seven principles of NMMS building (Table 2, p. 24), provides a simple set of rules for developing and implementing a successful NMMS.

These principles are synergistic and built upon one another—all seven are needed for optimal effect. Think of each principle as a lever that influences the system, levers that an EHS professional can pull to increase the odds of developing and implementing an effective and sustainable NMMS. When these levers are in the wrong positions, it is difficult to have a system that gains traction and delivers

expected results. These seven principles are not meant to be an exhaustive framework for building an effective NMMS in every circumstance and setting.

Whenever an EHS professional wants to develop and roll out or improve an NMMS, they should ask themselves:

- 1) What can be done so employees can identify and recognize near misses?
- 2) What can be done to make reporting a near miss uplifting or enticing for employees?
- 3) What can be done to make the near-miss reporting process easier, faster and more convenient for employees?
- 4) How can management act upon reported near misses in a timely fashion?
- 5) How can an organization ensure that the implemented corrective and preventive actions deriving from a reported near miss are effective?
- 6) How can management publicize not only corrective and preventive actions that were taken but also progress, improvement and positive results deriving from those actions?
- 7) How can an organization nurture and maintain the system so it can stay alive while keeping employees motivated, engaged, galvanized and energized?

As an EHS professional, you may have asked yourself these questions:

- Why is my NMMS not getting any traction?
- Why are workers not reporting near misses?
- Why are reported near misses not acted upon in a timely fashion?
- Why are the corrective actions not effective?

The answers can be found in these seven principles. The key to creating a

successful and effective NMMS is understanding these fundamental principles and how to customize them to your specifications.

**1) Make Near-Misses Visible, Recognizable & Identifiable**

The process of building an effective NMMS always starts with near-miss identification. An organization can make near misses visible, obvious, recognizable and identifiable to employees in several ways, such as by defining a near miss and training and educating employees.

**Define**

Before asking employees to report near misses, it is important to clearly, exactly and unambiguously define what constitutes a near miss. In an organization, when everyone agrees on what the characteristics of a near miss look like, there is no hesitation, doubt or miscommunication about what should be reported. Everyone is on the same page about what is and is not a near miss. To have an effective NMMS, this definition should be not only crafted by the organization but also broad and all inclusive. One example definition: A near miss is any opportunity to make things safer, healthier or better.

**Teach, Train & Educate**

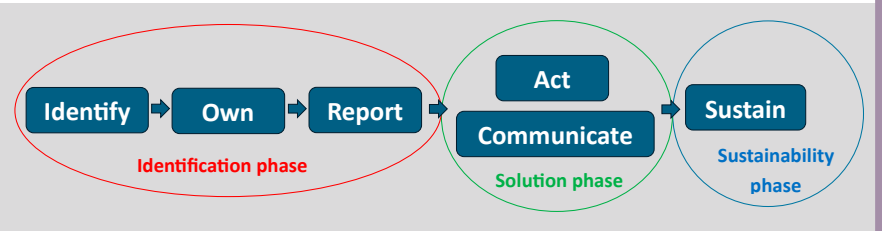
After defining a near miss, simply expecting employees to start reporting these incidents is not realistic. Employees must be not only taught and trained but also regularly refreshed on the concept. Strategic questions to ask in NMMS training include:

- How can reporting near misses help the organization prevent injuries and incidents?

**TABLE 1**  
**THREE PHASES OF THE NEAR-MISS CYCLE**

Identification phase			Solution phase		Sustainability phase
1) Identify	2) Own	3) Report	4) Act	5) Communicate	6) Sustain

**FIGURE 1**  
**CHRONOLOGICAL PHASES OF NEAR-MISS CYCLE**





- What are the personal benefits employees have for reporting near misses?
- What is the near-miss reporting process?
- When should I report a near miss?
- Where can I find a near-miss reporting form?
- How do I report a near miss?
- What information should I report?
- What should workers expect after making a report?
- Can I get in trouble for reporting a near miss?

The training should be as practical as possible, and it may be helpful to provide employees with examples or pictures of near misses in the workplace. Employees should practice filling out near-miss forms either manually or electronically. Near-miss training should be part of the organization's new hire safety orientation. Ideally, training should be a combination of formal safety training events and informal toolbox talks and safety meetings.

## 2) Motivate

How can an organization make near-miss reporting uplifting and enticing for an employee who observes a near miss? EHS professionals can achieve this in several ways:

### Treat Employees Well

Treat employees like human beings first and employees second. Respect them. Make them feel valued, needed and important. Make them see that their voice counts.

### Build a Strong, Positive & Envable Safety Culture

Build a strong, positive and enviable safety culture that will create and promote a culture of near-miss reporting and encourage workers to participate without fear of discipline as well as

reduce peer pressure (e.g., will a worker's peers encourage them to report a near miss, or will they discourage the worker and view them as not very macho or manly, or patronizing management?).

### Take Swift Actions

Taking swift actions in response to a reported near miss can also encourage reporting because it demonstrates to workers that management is listening to those who report near misses and taking safety seriously. All reported near misses, no matter how small or inconsequential, must be treated with the same level of concern, importance and urgency.

### Communicate

Ensure that there is regular and timely communication of information related to the reported near miss in a useful and understandable format. Emphasize how near-miss reporting benefits employees by giving real-world examples of how it prevented an injury or saved a life.

### Acknowledge, Praise, Recognize & Reward

Acknowledge, praise, recognize or reward not only the employee who reported the near-miss but also employees who helped fix it. Organizations could also create an incentive program that focuses on rewarding employees for reporting near misses, hazards and taking an active role in creating a safer workplace.

### Ask Employees for Input

EHS professionals can ask employees for input either formally via one-on-one interviews or informally via an online survey. Ask employees questions such as:

- What would stop you from reporting a near miss?

- What would encourage you to report a near miss?

- What do you think should be included in the near-miss program?

## 3) Make It Easy

As an organization, how can the near-miss reporting process be made easier? What actions can be taken to make the near-miss reporting process simple, faster, effortless and more convenient for employees? Some strategies include:

•**Accessible.** Make the near-miss reporting forms or electronic tracking system easily accessible. If the organization is using a traditional paper form, having the near-miss reporting form easily accessible can help increase near-miss reporting and make for a better employee experience. Place the forms and pencils at each workstation, break rooms and time clock areas.

•**Visible.** Choose a color for the near-miss reporting form that stands out. Avoid the traditional white paper. Using a color that stands out (e.g., yellow) provides a visual cue that the form is about a near miss.

•**Simple.** Keep near-miss forms short and easy to fill out.

•**Multiple reporting methods.** Institute several means to report near misses.

## 4) Timely Actions

The effort put into encouraging employees to report near misses and making the reporting process as effortless as possible will be lost without taking timely actions on reported near misses. Generally, management can act upon reported near misses in a timely manner by developing a sense of urgency. This does not mean rushing to fix the near miss, but addressing reported near misses with the urgency they deserve. Specific ways to develop a sense of urgency include:

•Set deadlines and track the progress periodically. Once a solution has been decided and owners assigned, a deadline must be set and progress should be tracked until completion.

•Encourage workers to suggest ways to address the reported near misses. This could be at the time of the report (ideally), after the report or at both stages. This part of the system is important when you begin work on hazard prevention and control.

•Ensure that the maintenance department is adequately staffed and prioritize addressing safety-related work orders.

•Use internal knowledge and experience to find solutions.

TABLE 2

## HOW TO CREATE AN EFFECTIVE NMMS

Principle 1 (Identify)	<b>Visible:</b> Make near misses visible, recognizable and identifiable to employees.
Principle 2 (Own)	<b>Motivated:</b> Get employees inspired to report near misses when they identify them. Get employees to feel a strong urge to report near misses once they recognize them.
Principle 3 (Report)	<b>Easy:</b> Make reporting near misses easy, frictionless, convenient and fast.
Principle 4 (Act)	<b>Timely:</b> Take corrective actions in a timely fashion.
Principle 5 (Act)	<b>Effective:</b> Take corrective actions that are effective.
Principle 6 (Communicate)	<b>Publicize:</b> Publicize corrective and preventive actions, progress and improvement. Give feedback. Show evidence that reported near misses made a difference. Disseminate information. Acknowledge, recognize, reward and praise. Capture lessons learned from the reported near miss, integrate them into existing safety training and share them with everyone.
Principle 7 (Sustain)	<b>Nurture:</b> Take care of the NMMS. Look after the system. Tie it to the big picture (the safety vision).

- Provide necessary training for maintenance personnel.

- Allocate budget for safety measures.

- When necessary, use third-party contractors.

- Empower all employees to spot and fix near misses and hazards at their own discretion if possible. Employees should still report near misses to management. Sometimes, employees hesitate to act because they are unsure if it is their responsibility to do so.

## 5) Effective Corrective Actions

How can EHS professionals make sure effective corrective actions are taken to address a near miss? Some strategies include:

- Perform a root-cause analysis.** Conduct a thorough investigation of the near miss to identify the main cause and possible solutions.

- Identify a solution and corrective actions.** Develop solutions and corrective actions to improve the situation and prevent recurrence.

- Analyze solutions for employee acceptance.** Ensure that end users approve the implemented solutions to increase their effectiveness.

- Trust but verify.** Monitor the changes to ensure that they effectively address the cause of the near miss, do not create other problems, comply with OSHA rules, and align with the company's values and safety rules.

- Train workers on new procedures.** If the solution includes new or revised safety procedures, ensure that all relevant workers are trained.

- Train maintenance personnel.** Ensure that maintenance personnel are competent and well-trained.

## 6) Publicize

Strategies that EHS professionals can use to publicize actions related to an NMMS may include:

- Show evidence of impact.** Demonstrate that the reported near miss made a difference and helped keep everyone (e.g., employees, contractors, visitors) safe.

- Publicize corrections and improvements.** Share the corrections and improvements resulting from reported near misses.

- Broadcast revised policies.** Highlight policies revised based on insights from near-miss reporting.

- Use visuals.** Show and post before and after pictures or videos in high-traffic areas or on monitors to help workers identify what constitutes a near miss.

- Acknowledge and reward.** Recognize and reward not only the employee who reported the near miss but also those who suggested and implemented the solution. Include these recognitions in newsletters, team meetings and other platforms.

## 7) Nurture

The work is not done once an EHS professional develops and successfully rolls out an NMMS. This is tantamount to planting a seed; once a seed is planted, it must be looked after and nurtured.

In the same vein, the NMMS must be constantly nurtured and reinforced to keep it engaging, stimulating and maintaining the necessary organization-wide interest. This is an area many EHS professionals may find challenging. EHS professionals can achieve this interest with various strategies:

- Conduct regular toolbox talks to ensure that employees understand the NMMS and provide feedback to improve it.

- Conduct weekly near-miss reviews with the management team, ideally led by the plant manager. Discuss accomplishments, debate new near misses, establish priorities, assign owners and set deadlines. These reviews help management stay on top of issues and hold owners accountable.

- Hold periodic plant-wide progress meetings. Once the NMMS is rolled out, maintaining momentum and keeping employees engaged is crucial. Workers must understand and see how their daily actions contribute to preventing injuries, saving lives and helping the organization achieve its financial goals. Employees must also see signs of progress (no matter how small) as nothing motivates more than consistent and meaningful progress. One way to accomplish this is by conducting periodic plant-wide near-miss progress meetings. Led by the EHS professional, these meetings can be as frequent as necessary for the organization. If the organization is still at the beginning of its journey for safety excellence and would like to see significant results within 1 to 2 years, a weekly meeting is recommended. For organizations with a more established program, monthly

or quarterly meetings may be ideal. At a minimum, these meetings should be held once a quarter. This periodic meeting is the ideal venue for the EHS professional to remind everyone of the organization's safety vision, show potent progress by sharing the before and after pictures of near misses, and give public recognition to employees who fixed reported near misses as well as those who spotted them. It is also the time to workshop ideas or solutions when trying to fix near misses that are challenging, and keep employees informed on what is going on within the organization, such as future projects.

- Continuous improvement. A successful NMMS is not a one-time event but an ongoing process. Regularly assessing the system and making changes based on feedback and performance helps to keep the program fresh, impactful, relevant and effective.

## Conclusion

For any organization that undertakes activities with inherent risks, a strong foundation for success should include an effective and sustainable NMMS. An effective NMMS helps in early detection of potential risks and hazards, improves safety culture and awareness, and promotes transparency and learning. There is no one right model to building an effective NMMS. This article provides a framework that is practical and customizable, drawn from real-world experiences with building successful and sustainable NMMS in various industries, organizations and countries. By using this model, EHS professionals can build an effective and sustainable NMMS regardless of their years of experience or the organization's current safety culture level. **PSJ**

## References

National Safety Council (NSC). (2013). Near miss reporting system. <https://bit.ly/4mdEztu>

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