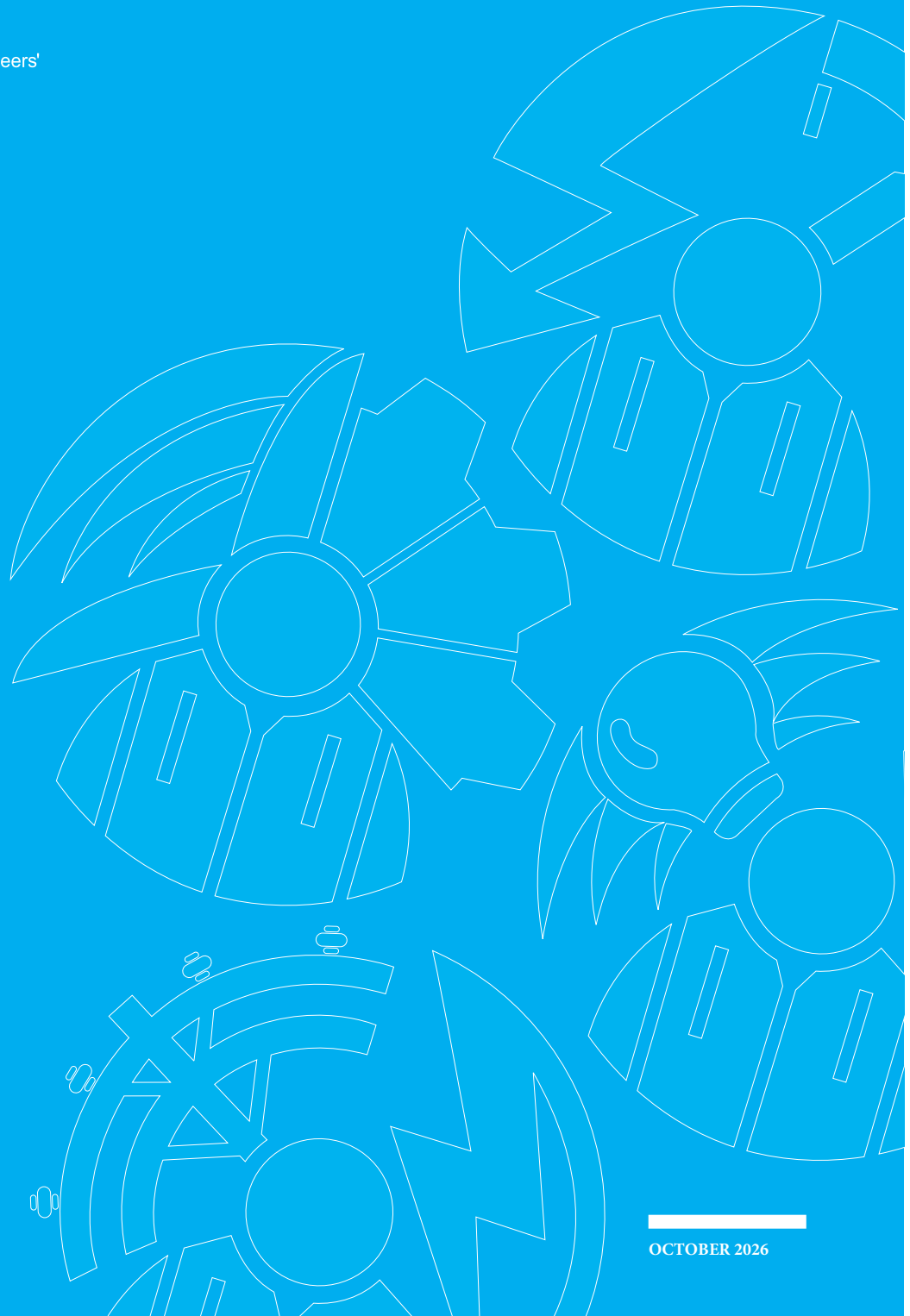




OCTOBER 2026

Public Safety Management System (PSMS) Performance Monitoring Guideline

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HEALTH + SAFETY
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Electricity Engineers'
Association

Public Safety Management System (PSMS) Performance Monitoring Guideline

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This guide has been prepared on the basis that the user will be appropriately trained, qualified, authorised, and competent.

Status of Examples and Case Studies

Examples, including sample processes, or case studies in this guide are included to assist with consideration of health and safety issues. The examples or case studies are not a comprehensive statement of matters to be considered, nor steps to be taken, to comply with any statutory obligations pertaining to the subject matter of this guide.

Acknowledgements

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Suggestions for improving the content of this guide should be sent to: Electricity Engineers' Association (EEA), PO Box 5324, Wellington, New Zealand. Email admin@eea.co.nz

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Purpose

The purpose of this guideline is to define a consistent, systematic approach to performance monitoring Public Safety Management Systems (PSMS) within the electricity industry.

This guideline supports electricity asset owners and operators to:

- verify that public safety risks arising from electricity generation, transmission, and distribution assets are effectively identified, controlled, and managed
- provide assurance to boards, executives, and regulators that the PSMS is implemented and operating as intended
- confirm that public safety risks are being reduced to a level that is *As Low As Reasonably Practicable* (ALARP) and remain tolerable
- enable continual improvement through the use of audits, performance indicators, incident learnings, and structured reviews
- promote consistency and good practice in PSMS monitoring across the electricity industry

Performance monitoring is a critical element of an effective PSMS and is necessary to demonstrate ongoing compliance with legislative obligations and industry standards, including *NZS 7901:2014* or section 49 and 50 of the *Electricity (Safety) Regulations 2010*.

Scope

Application

This guideline applies to all electricity industry participants that are required to establish and maintain a PSMS, including:

- electricity generation asset owners and operators
- electricity transmission asset owners and operators
- electricity distribution network owners and operators
- organisations managing electricity assets on behalf of an owner or operator, where those activities may affect public safety.

Asset Coverage

The performance monitoring activities described in this guideline apply to electricity assets within the scope of *NZS 7901:2014*, including but not limited to:

- generation facilities (hydro, geothermal, thermal, wind, solar)
- transmission and distribution networks
- substations, switchyards, and ground-mounted equipment
- control centres and associated operational systems
- associated watercourses and structures where electricity generation activities create additional public safety risks

Lifecycle Coverage

Performance monitoring under this guideline applies across the full asset lifecycle, including:

- design and planning
- construction and commissioning
- operation and maintenance
- asset change and modification
- emergency conditions
- decommissioning and removal

Exclusions

This guideline does not replace:

- occupational health and safety management systems for workers
- environmental management systems
- asset management standards or reliability frameworks

However, it is expected that PSMS performance monitoring is integrated with other management systems where practicable to ensure a coordinated and efficient assurance approach.

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1 Legislative and Regulatory Requirements

1.1 Primary Legislation

Electricity asset owners and operators have statutory obligations to protect the public from risks arising from electricity assets under NZ legislation, including:

- Electricity Act 1992
- Electricity (Safety) Regulations 2010
- Gas (Safety and Measurement) Regulations 2010

These pieces of legislation require asset owners and operators to ensure so far as is reasonably practicable, that electricity assets do not present a significant risk of serious harm to members of the public or significant damage to property.

1.2 Safety Management Systems for Public Safety

Under [Regulation 48 of the Energy \(Safety\) Regulations 2010](#)¹, every generator and electricity distributor that own or operate an electricity supply system must implement and maintain a (Public) Safety Management System (SMS) that complies with either:

- NZS 7901, or
- Regulations 49 and 50 of the Energy (Safety) Regulations

NZS 7901:2014 – Electricity and gas industries – Safety management systems for public safety – provides the recognised industry framework for meeting these obligations.

NZS 7901 requires that a PSMS:

- Is documented, implemented, and maintained
- Addresses the identification, assessment, and treatment of significant public safety risks
- Includes performance monitoring through:
 - Audits
 - Key performance indicators
 - Incident review
 - Periodic and annual system reviews

This guideline supports the performance monitoring requirements of *NZS 7901* and provides additional clarity on good practice approaches within the electricity industry.

¹ NOTE: This is also a requirement under the [Gas \(Safety and Measurement\) Regulations 2010](#)

2 Performance Monitoring Elements

2.1 Audits

Objective: Verify PSMS implementation, effectiveness, and improvement opportunities.

Audits are critical for verifying the implementation and effectiveness of the PSMS and ensuring continuous improvement.

Audits: Internal, external, or self-assessment; check if processes are followed, controls work as intended, and where improvements are needed.

They support compliance with *NZS 7901* and inform ongoing performance monitoring in the electricity industry.

AUDIT TYPE	BY WHO	SCOPE	FREQUENCY
External Independent Audit	Accredited Auditor as defined by regulation 4 of the Electricity (Safety) Regulation 2010	Full PSMS or defined modules	≤ 2-year intervals (full coverage ≤ 5 years)
Internal Audit ²	Internal persons who meet the requirements of section 6.2.4 of NZ7901:2014	Risk-based PSMS elements	As defined in PSMS recommended annually – No set interval by NZS 7901:2014
Self-Assessment	By persons knowledgeable and experienced in the assets & public safety issues	Asset and site-level controls	Ongoing – No set interval by NZS 7901:2014

Outputs: Audit reports, self-assessment reports, findings, corrective actions, improvement opportunities.

² EEA – Internal Audit Guidance Template – NZS 7901:2014

2.2 Key Performance Indicators (KPIs)

Objective: Measure both safety outcomes and the effectiveness of controls.

Ensuring the highest standards of public safety is a core commitment for the organisation, which is why the organisation regularly conduct internal audits and self-assessments. These assessments assist in identifying risks, performance monitoring public safety management systems, and proactively address any issues before they can impact the community.

By tracking key performance indicators such as serious harm incidents and the completion of safety inspections, the organisation demonstrates their commitment to transparency and continuous improvement for the wellbeing of everyone served.

TYPE	EXAMPLES OF KPI'S
Lagging Indicators (What has happened):	Public serious harm incidents
	Significant public property damage
	High potential public safety events
Leading Indicators (What prevents harm):	Number of untreated significant public safety risks
	Completion of investigations and corrective actions
	Public safety inspections completed
	PSMS training completion
	Public safety engagement activities
Requirements:	SMART KPI's:
	Specific – clearly defined
	Measurable – supported by data
	Achievable – realistic and attainable
	Relevant – aligned with the intended safety outcome
	Time-bound – assessed within a defined timeframe
	Trends analysed over time
	Results inform risk prioritisation and investment decisions

2.3 Incident Monitoring

Objective: Learn from events to prevent recurrence.

This objective focuses on analysing incidents and near misses to identify causes, track trends, and review corrective actions. Insights gained guide risk prioritisation and investment, supporting continuous improvement and reducing the chance of similar events recurring.

Monitoring includes:

- all public safety incidents and near misses
- root cause analysis
- effectiveness of corrective and preventive actions
- emerging risk themes

Outputs: Incident reports, action tracking, annual incident summary.

2.4 Risk and Control Review

Objective: Confirm risks remain ALARP and tolerable by regularly reviewing risk assessments, control effectiveness, and any changes in the operational environment.

This ensures that risks are continuously managed, controls are updated as needed, and safety standards are maintained at an acceptable level to prevent harm or significant incidents.

Reviews triggered by:

- periodic review cycles (risk based)
- asset or operational change
- significant incidents or emergencies
- audit findings
- changes in environment, land use, or legislation

Outputs: Updated risk registers, revised controls, prioritised treatment plans.

2.5 Review and Assurance (Annual Reviews)

Objective: The annual review of the PSMS shall review internal and external audit findings (including recommendations), KPIs, incident summaries, changes in risk profile, and effectiveness of controls. The objective is to confirm the PSMS remains suitable, with improvement actions and risk registers updated as needed. At a minimum the topics to cover include:

- Internal and External Audit findings (including recommendations)
- KPI performance and trends
- incident summaries and learnings
- the results of reviews of risks
- the results of review of safety and operating processes

By Whom: Those managing and implementing the PSMS should conduct and document the annual review, which may be done via a workshop or meeting.

Outcome: Confirmation that the PSMS remains fit for purpose, with agreed improvement actions.

2.6 Reporting and Escalation

Objective: The objective of reporting and escalation channels is to ensure transparent communication of public safety management system performance, key risks, and assurance outcomes to relevant stakeholders.

These channels enable timely dissemination of critical information and facilitate appropriate responses to emerging issues, supporting continuous improvement and compliance across all organisational levels.

RECOMMENDED AUDIENCE	RECOMMENDED CONTENT	RECOMMENDED FREQUENCY
Boards	<i>PSMS performance, key risks, trends, assurance</i>	<i>At least annually</i>
Executive Leadership Teams	<i>KPIs, incidents, audit actions</i>	<i>Quarterly</i>
Operational Teams	<i>Learnings, control effectiveness</i>	<i>Ongoing</i>
Regulators / Stakeholders	<i>As required</i>	<i>As required</i>

3 Conclusion

In conclusion, the performance monitoring and reporting processes outlined above provide assurance that high standards of management, operational effectiveness, and regulatory compliance are being maintained. Regular review of KPIs, incidents, and audit actions, combined with the sharing of learnings across teams, reinforces a culture of continuous improvement.

Collectively, these activities support effective risk management and enhance stakeholder confidence in operational performance. Ongoing refinement of these practices will ensure continued alignment with evolving requirements and expectations.

Appendix A Internal Audit Example

Generic template for electricity generation, transmission, distribution, and gas distribution organisations aligned to NZS 7901:2014 principles.

Purpose

This example outlines audit areas, test points, and evidence examples for internal audits of a PSMS in electricity and gas organisations. It is intended as high-level guidance only and does not replace organisation-specific internal audit documents.

Use

Define the scope, gather evidence, record findings, and assign actions. Tailor the checklist to the asset or activity being reviewed.

- tailor the scope to the relevant business unit, asset class, site, or process being audited.
- map each audit area to the organisation's PSMS documents, procedures, standards, and risk controls.
- use interviews, document review, record sampling, and field verification to test implementation.
- record objective evidence for each conclusion.
- rate findings based on the significance of the gap and the potential effect on public safety outcomes.
- where a requirement is not applicable, record the reason.

Audit Details

Organisation / Site	
Audit Scope	
Audit Criteria	
Date	
Auditor	
Key Contacts	

Rating Scale

RATING	MEANING
Conforming	<i>Requirement is in place and working.</i>
Opportunity for Improvement	<i>Could be strengthened.</i>
Minor Non-Conformity	<i>Partly met or inconsistent.</i>
Major Non-Conformity	<i>Not met or ineffective.</i>
N/A	<i>Not applicable.</i>

Audit

AUDIT AREA	NZS 7901:2014 REFERENCE	WHAT TO TEST	EXAMPLE EVIDENCE
1. Governance and responsibilities	Section 2.4	Is there clear accountability for public safety management, oversight, decision-making, and reporting?	PSMS manual, governance terms of reference, role descriptions, delegated authorities, board or leadership reports
2. PSMS scope and context	Section 2.3	Has the organisation defined which assets, activities, interfaces, and public safety risks are covered by the system?	System scope statement, asset registers, operating boundaries, interface maps, contractor arrangements
3. Management of risks	Section 4	Is there a defined and repeatable process for identifying, assessing, controlling, monitoring, and reviewing public safety risks?	Risk management procedure, risk matrix, risk registers, risk review records, risk treatment plans
4. Hazard and risk identification	Section 4	Are credible sources of public harm or property damage identified across normal operations, abnormal conditions, maintenance, outages, projects, and emergencies?	Hazard studies, risk workshops, incident reviews, change assessments, field inspections, risk assessments
5. Critical controls and barriers	Section 4	Are key controls defined for material public safety risks, and is their performance monitored?	Control framework, design standards, inspection regimes, protection systems, signage, isolation controls, maintenance records
6. Legal and other requirements	Section 5.5	Does the organisation identify and maintain awareness of applicable legal, regulatory, code, consent, and internal requirements relevant to public safety?	Legal registers, compliance obligations registers, standards lists, assigned owners, review records
7. Asset lifecycle controls	Section 3 / Section 5	Are public safety requirements considered through design, construction, commissioning, operation, maintenance, modification, and decommissioning?	Design reviews, engineering standards, commissioning records, maintenance plans, defect management, project files
9. Change management	Section 5.8	Are changes to assets, systems, operating conditions, organisation, or contractors assessed for public safety impacts before implementation?	Management of change records, engineering change notices, project reviews, temporary change approvals
10. Operational controls	Section 5.1	Are operational procedures, field rules, permit systems, switching practices, access controls, and boundary protections effective in managing risks to the public?	Procedures, permits, switching instructions, site rules, access control records, field observations
12. Competence and training	Section 5.7	Are personnel and contractors competent for roles that influence public safety, and are refresher or assurance processes in place?	Competency matrices, training records, authorisations, assessments, supervision records
13. Communication and public awareness	5.9	Are there arrangements to communicate relevant safety information to workers, contractors,	Awareness campaigns, stakeholder communications, notices, signage plans, education materials

AUDIT AREA	NZS 7901:2014 REFERENCE	WHAT TO TEST	EXAMPLE EVIDENCE
		landowners, customers, emergency services, and the public?	
14. Incident and near miss management	5.11	Are public safety incidents, complaints, and near misses reported, investigated, and used to improve controls?	Incident records, investigation reports, corrective actions, lessons learned, trend reports
15. Emergency preparedness and response	5.6	Are foreseeable public safety emergencies identified, planned for, exercised, and reviewed?	Emergency plans, contact lists, exercise records, debriefs, coordination arrangements with emergency services
16. Monitoring, assurance, and review	Section 6	Does the organisation monitor PSMS performance, complete audits and inspections, track actions, and review system effectiveness?	KPIs, audit schedules, inspection reports, action registers, management review minutes
17. Records and document control	Section 7	Are PSMS documents current, approved, accessible, and supported by reliable records?	Document control procedure, version histories, approval records, archived records, controlled forms
18. Continual improvement	Section 5.3	Is the PSMS updated in response to audit findings, incidents, technical changes, emerging risk, and industry learning?	Improvement plans, standards updates, post-incident reviews, benchmarking outputs, management actions

Findings Summary

No.	Audit Area	Rating	Finding	Action Required
1				
2				
3				

Finding No.	Audit Area	Rating	Finding Summary	Risk / Impact
1				
2				
3				

Action Tracker

Action	Owner	Due Date	Status
--------	-------	----------	--------

Action No.	Related Finding	Required Action	Owner	Due Date	Status	Verification of Close-out
1						
2						
3						

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Conclusion and Sign-off

OVERALL CONCLUSION	
KEY ACTIONS	
Name	
Role	
Date	
Auditor	
Manager	
OVERALL CONCLUSION	
KEY STRENGTHS	
PRIORITY IMPROVEMENTS	

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Appendix B Self-Assessment Example

Public Safety Self-Assessment Checklist and Process

Introduction

This assessment aims to ensure that all safety measures are in place and effective, in accordance with the NZS 7901:2014.

The assessment will include:

- a Desktop Review which involves a detailed examination of work orders, risk management records, and incident reports.
- a Review of Stakeholder communication
- a thorough Field Inspection of the site.

This document serves as a detailed record of our internal review, fulfilling our commitment to maintaining and enhancing public safety controls.

Desktop Review

The desktop review is the first step in our public safety self-assessment process it sets the framework for the subsequent field inspection and helps to identify areas that require close attention. During this review, we will examine various documents and records to determine the current state of public safety measures and to highlight any potential risks.

WORK ORDERS (WO)	REVIEW WORKER ORDERS (WO) RELATED TO PUBLIC SAFETY AT THE SITE
Check for recent updates, planned work and identified risks	<i>Have you undertaken any work on sites that have altered or impacted existing public safety controls, or made any improvements? These areas/sites will be included in the Field Inspection.</i>
Review Public Safety Risk Register	<i>Confirm that all risks are properly documented and that appropriate controls are implemented. Verify residual risk scores and prioritise addressing high-risk issues accordingly.</i>
Review Incidents	<i>Verify that incidents have been investigated, ensure corrective actions are completed and closed out, and confirm that evidence of resolution is available.</i>
DESKTOP REVIEW KEY FINDINGS	

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Stakeholder Communication Review

This section involves verifying records of communication with relevant stakeholders (including but not limited to):

- the Department of Conservation (DOC)
- local IWI
- schools
- fishing groups
- and other community groups.

It is essential to confirm that all communications have been properly documented.

STAKEHOLDER COMMUNICATION DETAILS

Document the reason for the communication, the actions taken, and the outcome. Additionally, include the location of the documented communication.

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Field Inspection

The field inspection will cover a sample of those identified on the public safety register. Priority will be given to areas where changes or improvements have been made, as well as any areas that present a residual high risk or are deemed by the site team to be of high risk.

Use the following table to record your observations of the public safety risk area.

PUBLIC SAFETY RISK AREA	RISK CONTROLS	CHANGES OR EMERGING RISKS	SIGNAGE AND BARRIERS
<i>i.e</i>	<i>Check that all risk controls are in place and effective</i>	<i>Identify any changes or emerging risks requiring additional controls</i>	<i>Review signage, barriers and restricted access points for adequacy</i>

Assessment Conclusion

SUMMARY OF OVERALL FINDINGS		
<i>Summarise key findings from both the desktop review and field inspection.</i>		
CORRECTIVE ACTIONS	BY WHO?	BY WHEN?

Appendix C Annual Review Agenda Template Example

AGENDA	
Performance Monitoring	<i>Internal Audit – Outcomes and Actions</i>
	<i>External Audit – Outcomes and Actions</i>
	<i>Self-Assessments - Reviews</i>
Public Safety Risk Register	<i>Review Register</i>
Public Safety Work Order Completions	
Public Safety Incidents Review	<i>Review Incidents for the Last 12 Months</i>
	<i>Trend Analysis</i>
Review of KPI's	<i>Performance Assessment</i>
	<i>Setting next year's KPIs</i>
Industry Updates	<i>Safety Alerts / Changes to legislation etc.</i>
Actions from the review	