



Innovative strategies, methods and tools for occupational risks management of manufactured nanomaterials (MNMs) in the construction industry

GUIDE FOR THE INITIAL REVIEW, THE MONITORING AND THE AUDIT OF SCAFFOLD'S RISK MANAGEMENT MODEL IN RELATION WITH MANUFACTURED NANOMATERIALS (MNMs) IN THE CONSTRUCTION SECTOR

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1 EXECUTIVE SUMMARY

The report is designed as a guidance document to facilitate the diagnostic/initial review, implementation and audit of the SCAFFOLD MNMs RMM for construction sector organizations. This report includes every requirement from the RMM in SPD14 with a brief explanation with examples of implementation and questions for self-assessment compliance with the requirements.

Through the Key Questions in each chapter (selected from the general check list), organizations can perform a self-evaluation in relation to the requirements of the MNMs RMM, and those where deficiencies are identified will be aspects/requirements to be implemented to improve the system. Through the section Guidelines for implementation, the company will find the easiest way to meet these requirements that will be the ones that focuses the audit questions.

The implementation of the MNMs RMM model is a critical task that is integrated with risk management of the company and contributes to improving the OH&S of workers who may be exposed to MNM risks in construction sector.

The use of the Toolkit will significantly facilitate the implementation of the RMM and the achievement of objectives. The Toolkit design and functionalities are deeply developed in other SCAFFOLD RM reports but from the implementation and audit point of view the key elements are:

- Review and preliminary evaluation;
- Training;
- Implementation help;
- Verification of compliance through 'key questions'.

The inclusion of the check list from section 6 into the Toolkit is one of the key elements of the risk management module that allows the company first evaluate/make an initial diagnostic, then implement certain points/requirements and finally be audited regarding the implementation of the MNMs RMM.

2 OBJECTIVES

The guide seeks to establish criteria for interpreting the model to facilitate the initial review/ implementation and audit in construction companies from manufacturing, maintenance to and including demolition. In short, the entire life cycle of the construction sector.

The "Guidelines implementation MNMs RMM" will be collected in a best practice for risk management which will help construction companies and other interested parties to select and adopt risk management methods and techniques. This report contains a common vision on methods and tools to implement MNMs risk management in the European construction sector.

3 SCOPE

The scope of this report is covering all types of organizations belonging to the construction sector. It also allows the construction sector to implement specific parts/all the RMM within the organization, for example a construction or a production line or a specific workplace or the entire organization and its activities.

This report provides guidelines that companies must follow to implement the MNMs RMM for integration with widely recognized international standards such as OHSAS 18001 and the recommendations provided by ISO 31000 about Risk Management.

These aspects have been developed deeply in the report SPD14 as innovative requirement model that is the principal bases for this report SPD15.

4 REQUIREMENTS FOR THE OH&S MNMS RISK MANAGEMENT MODEL

This section includes the recommendations and guidelines for the preliminary review, implementation and audit for the MNMs RMM designed in SPD14. This information is structured as many guidance documents for management system standards with an identification of the requirement (text inside the square in grey shadow) followed by a clear explanation of this requirement in this case accompanied with several questions extracted from the general check list included in section 6.

The information is then presented for each requirement followed by general indications, useful implementation guidelines and examples and finally a set of key questions.

The key questions are selected from the check list in section 6, with more than 270 questions for diagnostic/initial review, implementation and audit. This check list is also included in the SCAFFOLD Toolkit as a potent and practical instrument to evaluate and help through all the stages in the RMM.

4.1 General Requirements

MNMs RMM report SPD14 text:

The organization shall establish, implement and maintain the MNMs RMM by ensuring that is applied through a MNMs risk management plan at all relevant levels and functions of the organization as part of its practices and processes.

4.1.1 Context

The organization shall establish the external and internal environment in which the organization seeks to achieve its objectives related to Occupational Health and Safety and affecting to capacity to carry out the expected results of MNMs RMM.

External context can include: the cultural, social, political, legal, regulatory, financial, technological, economic, natural and competitive environment, whether international, national, regional or local; and relationships with, and perceptions and values of external stakeholders.

Internal context can include: governance, organizational structure, roles and accountabilities; policies, objectives, and the strategies that are in place to achieve them; infrastructure; critical areas; the human resources and knowledge; information systems; relationships with, and perceptions and values of, internal stakeholders.

4.1.2 Necessities and expectations for stakeholders

The organization shall identify the internal and external stakeholders affected to MNMs RMM, and establish the requirements for them.

It is necessary to ensure the necessities and expectations for stakeholders are understood and taken into account.

The stakeholders affected for the MNMs RMM, can include, but not limited to: owners, shareholders, investors and partners; employees; customers, users and consumers; product suppliers, service providers and partners; alliances and collaborative efforts; government; community and society.

4.1.3 Scope determination and requirements for the MNMs RMM

The organization shall determine the limits and applicability of MNMs RMM to establish its scope.

When this scope is determined, the organization must take into account the external and internal aspects and requirements of the stakeholders referred to in 4.1.2.

The scope should include, among other information, the workplace, organizational units and locations.

In defining the scope of MNMs RMM, the organization shall document and explain those exclusions which should not affect the ability and responsibility of the organization to provide the achievement of its objectives, the continuity of the organization and its activities, as well as compliance with legal, regulatory and other requirements.

The organization shall establish, document, implement, review and continuously improve the MNMs RMM effectively in accordance with the requirements of this specification, and determine how you will comply with these requirements.

When an organization chooses to outsource any activities that affect conformity to requirements, the organization shall ensure control over such process. The type and extend of control to be applied to these outsourced processes shall be defined within the MNMs RMM.

Note 1: An "outsourced activity" is an activity that the organization needs for its MNMs RMM, and which the organization chooses to have performed by an external party.

Note 2: Ensuring control over outsourced activities does not absolve the organization of the responsibility of conformity to all requirements, including legal and regulatory.

4.1.1 General

As a first step towards the MNMs risks management, the organization shall define both the external and the internal context in which the organization shall manage those risks. During the definition of the context, the organization shall take into account the necessities and expectations of stakeholders (shareholders directives and expectations, clients' requirements, contractor or suppliers' demands, final users' necessities, etc.) as interested parties in the risk management.

Once the previous information has been gathered, the organization shall determine the scope, as well as the level and extent of the pertinent risk management activities. Scope explicit definition, identifying inclusions and exclusions is convenient.

4.1.2 Guidelines for implementation

Prior to the Risk Assessment and the Scope definition, the organization shall establish the Risk

management context, both internal and external.

In defining the internal context is the following aspect shall be taken into account:

- the organization strategy, policy, and objectives,
- structure (e.g. governance, organization structure, roles and accountabilities),
- capabilities in terms of resources,
- relationships with, and perceptions and values of internal stakeholders.

A strong knowledge of external context is needed to ensure an effective risk management. Thus the following aspect must be taken into consideration in the process of defining the external context:

- legal and regulatory requirements,
- clients, social partners, suppliers, and other interested parties requirements and demands,
- the cultural, political, legal, regulatory, financial, technological, economic, natural and competitive environment, whether international, national, regional or local.

Once the context has been established, the organization shall determine the scope (activities related with the process (es)/manufacturing / type of construction work and in general with the nanomaterials inside the construction life cycle specify in D 1.5), as well as the level and extent of the pertinent risk management activities. Exclusions to the scope must be documented, usually in the 'scope' section inside the MNMs RMM. Note that the organization shall ensure the control over outsourced activities therefore, these activities can't be excluded.

4.1.3 Key Questions

1. What is the scope of the MNMs RMM?
2. What scope is being assessed for certification?
3. Is the scope of the MNMs RMM defined and formally documented within your organization?
4. Are there activities that are excluded from the scope of the MNMs RMM and are the reasons for exclusion acceptable?
5. Has your organization identified the external and internal context?
6. Has your organization established the external and internal context in which the organization seeks to achieve its objectives related to Occupational Health and Safety and affecting to capacity to carry out the expected results of MNMs RMM?
7. Has your organization identified the internal and external stakeholders affected to MNMs

RMM?

8. Has your organization identified the internal and external stakeholders affected to MNMs RMM and establish the requirements related to Occupational Health and Safety matters for them?
9. Does it include those occupational, health and safety matters related to MNMs risks and hazards which you can control or over which you could be expected to have an influence upon?
10. Has your organization established, documented, implemented, reviewed and continuously improved the MNMs RMM effectively in accordance with the requirements of this specification?
11. Has your organization determined how you will comply with these requirements?

4.2 MNMs risk management policy and management commitment

MNMs RMM report SPD14 text:

4.2.1 Management commitment

Top management shall ensure that the roles, responsibilities and authority in the organization, as well as accountability for managing Occupational, Health and Safety matters related to MNMs risk. These shall be documented and communicated within the organization to facilitate effective management of MNMs Risks.

Among others, identify risk owners and people who have accountability of performance, implementation and maintenance of MNMs RMM at all levels of the organization and ensure that they have the appropriate skills to manage MNMs risks.

4.2.2 MNMs risk management policy

Top management shall define and authorize the organization's MNMs risk management policy and ensure that within the defined scope of its MNMs RMM it:

- a) is appropriate to the nature and scale of the organization's Occupational, health and safety matters related to MNMs risks;
- b) includes a commitment to prevention of injury and ill health and continual improvement in MNMs RMM and MNMs risk management performance;
- c) includes a commitment to at least comply with applicable legal requirements and with other requirements to which the organization subscribes that relate to its MNMs risks;
- d) provides the framework for setting and reviewing objectives;
- e) is documented, implemented and maintained;
- f) is communicated to all persons working under the control of the organization with the intent that they are made aware of their individual MNMs RMM obligations;

- g) is available to stakeholders; and
- h) is reviewed periodically to ensure that it remains relevant and appropriate to the organization.

4.2.1. General

Top management shall demonstrate its leadership and commitment to the success of the MNMs RMM and to achieve a better performance of the risk management, through the continual improvement and the fulfillment of the legal requirements and other requirements to which the organization subscribes. This commitment will be embodied into the MNMs risk management policy.

4.2.2 Guidelines for implementation

Top management should establish the strategy for the MNM risk management, which will be the basis for setting the objectives. This strategy and the commitment to the continual improvement shall be reflected into the MNM risk management policy. Thus, the policy must be consistent, and suitable for the size and the nature of the MNM risk. In the case of MNMs these risks could be;

- Toxicity, dermal, digestive or breath path
- Health negative effects like inflammation or harm
- Fire or explosion of determined substances

The policy shall include, among others, the commitment to the compliance to applicable legal and other requirements that the organization has willingly subscribed, as well as to the prevention and protection of employees from the MNM risk, and interested parties necessities.

The policy shall include at least the top management compromise in MNMs risk prevention and continual improvement in MNMs risk management, the compliance with legal requirements and other specific requirements that allow a labour conditions improvement when some specific jobs are affected by MNMs risks.

Besides, the policy shall be documented, implemented, maintained and communicated to all persons working under the control of the organization and available to stakeholders. The policy shall principally be integrated in the organization management manuals (specifically in the MNMs RMM manual) and shall be used all the available instruments for information dissemination like notice boards, webs, annual report information, etc.

On the other hand, in order to assure the pertinence and the adequacy, the policy shall be periodically reviewed.

4.2.3 Key Questions

1. Has your organization defined the roles, responsibilities and authority?
2. Has the top management ensured the roles, responsibilities and authority into the organization, as well as accountability for managing Occupational, Health and Safety matters related to MNMs risk?
3. Has your organization defined a MNMs RMM policy?
4. Does the MNMs Risk Management policy include a commitment to comply with applicable legislation and regulations, and with other requirements to which you subscribe that relate to your Occupational, Health and Safety hazards (e.g. Industry sector guidelines)?
5. Is the MNMs RMM policy documented, implemented and maintained?
6. How is the policy communicated to all persons working under the control of the organization and the interested parties?
7. How the policy is made available to the interested parties?
8. Is the policy reviewed at regular intervals and what triggers will result in the review to be undertaken by the organization?

4.3 Planning

4.3.1 MNMs risk assessment

MNMs RMM report SPD14 text:

4.3.1.1 General

The organization shall establish, implement and maintain a procedure(s) for the ongoing MNMs risk identification, MNMs risk assessment, and determination of necessary controls.

Note: ISO/IEC 31010 provides guidance on risk identification, analysis and evaluation techniques.

4.3.1.2 MNMs risk identification

The organization shall establish, implement and maintain a procedure(s) for the ongoing MNMs risk identification. The procedure(s) for MNMs identification shall take into account:

- a) Identify sources of MNMs risk, areas of impacts, events (including changes in circumstances) and their causes and their potential consequences.
- b) activities of all persons having access to the workplace (including contractors and visitors);
- c) human behavior, capabilities and other human factors;

d) identified hazards originating outside the workplace capable of adversely affecting the health and safety of persons under the control of the organization within the workplace;

e) hazards created in the vicinity of the workplace by work-related activities under the control of the organization;

NOTE 1: It may be more appropriate for such hazards to be assessed as an environmental aspect.

f) infrastructure, equipment and materials at the workplace, whether provided by the organization or others;

g) changes or proposed changes in the organization, its activities, or materials;

h) Operations, process and activities (routine and non-routine activities) and their workplaces.

i) Legal and other requirements to which the organization subscribes that are applicable to it.

j) modifications to the MNMs risk management model, including temporary changes, and their impacts on operations, processes, and activities;

k) any applicable legal obligations relating to risk assessment and implementation of necessary controls);

l) the design of work areas, processes, installations, machinery/equipment, operating procedures and work organization, including their adaptation to human capabilities.

The MNMs risk identification is included:

a) those events that could create, enhance, prevent, degrade, accelerate or delay the achievement of objectives;

b) sources of MNMs risk, whether or not under the control of the organization;

c) areas of risk impacts on operations, processes and activities of the organization;

d) the causes and potential consequences of the risks, include examination of the knock-on effects of particular consequences, including cascade and cumulative effects.

NOTE: Comprehensive identification is critical, because a risk that is not identified at this stage will not be included in further analysis.

The organization should apply risk identification tools and techniques that are suited to its objectives and capabilities, and to the risks faced. Relevant and up-to-date information is important in identifying MNMs risks. This should include appropriate background information where possible. People with appropriate knowledge should be involved in identifying MNMs risks.

The organization shall document and keep the results of identification of MNMs hazards, risk assessments and determined controls up-to-date.

4.3.1.3 MNMs risk evaluation

The organization shall establish, implement and maintain a procedure for MNMs risk evaluation, so that the nature and level of risk is understood to prioritize the risks to be addressed and to facilitate decision making in the organization.

First, the organization shall define criteria to be used to evaluate the significance of MNMs risk. The criteria should reflect the organization's values, MNMs risk policy, objectives and resource, and some criteria can be imposed by, or derived from, legal and regulatory requirements and other requirements to which the organization subscribes. When defining risk criteria, factors to be considered should include the following:

- a) establishment of the internal and external context;
- b) the nature and types of causes and consequences that can occur and how they will be measured;
- c) how likelihood will be defined;
- d) the timeframe(s) of the likelihood and/or consequence(s);
- e) how the level of risk is to be determined;
- f) the views of stakeholders;
- g) the level at which risk becomes acceptable or tolerable; and
- h) whether combinations of multiple risks should be taken into account and, if so, how and which combinations should be considered.

NOTE: The MNMs Risk Criteria shall be documented and communicated.

MNMs Risk evaluation involves developing an understanding of the MNMs risk. The organization shall establish, implement and maintain a procedure(s) for MNMs risk evaluation. The purpose of risk evaluation is to develop an understanding of the MNMs risk and assist in making decisions into the organization, about which risks need treatment and the priority for treatment implementation.

MNMs Risk is analyzed by determining consequences and their likelihood, and other attributes of the risk. The way in which consequences and likelihood are expressed and the way in which they are combined to determine a level of risk should reflect the type of risk, the information available and the purpose for which the risk assessment output is to be used. These should all be consistent with the MNMs risk criteria. It is also important to consider the interdependence of different risks and their sources.

Afterwards, risk evaluation involves comparing the level of risk found during the analysis process with risk criteria established. Based on this comparison, the need for treatment can be considered.

4.3.1.1 General

In order to give a proper management of the health and safety risks in the workplace is essential to assess the risks. The risk assessment is the process which covers identification of risks, analysis and risk evaluation, this will lead to eliminate, or reduce them to an acceptable risk level.

When thinking about risk assessment, must be taken into account the difference between hazard and risk. According to the definition given by the OSHAS 18001, risk is the combination of an occurrence of hazardous event or exposure(s) and the severity of injury or ill health that can be caused by the event or exposure(s), while hazard is defined as the source, situation, or act with a potential for harm in terms of human injury or ill health, or a combination of these.

4.3.1.2 Guidelines for implementation

4.3.1.2.1 Risk Identification

Prior to the conduction of the risk evaluation is necessary to perform a risk identification. Risk identification is the process of finding, recognizing and recording risks. The identification process must consider each activity or function as defined by the context (see 4.1.1), consider the hazards for the activity or function, and then determinate which may create a hazardous situation. For each risk, all possible causes of the risk event must be identified; this will allow that existing controls can be properly evaluated.

In order to identify the risks due to the use of products that content MNM, the identification of the MNM present in the material is requested, gathering as much as information is available related to physicochemical, toxicity and ecotoxicity characteristics; potential routes for human exposure; human dose response and safety aspects. Some MNMs and their application, according to SCAFFOLD's Roadmap for occupational safety in relation with manufactured nanomaterials (MNMs) in the construction sector (SPD3), are given in Table 1 below:

MNM	Application/matrix
SiO ₂	Concrete
TiO ₂	Mortar
Nanoclay	Fire resistance panels
Cellulose NFs	Bituminous Road
Carbon NFs	Coating/Paint

Table 1: MNM and their application (from SPD3)

During the identification of risks, routine and no routine situations must be considered, both internal and external context where the organization seeks to achieve its objectives related to Occupational Health and Safety, all persons having access to the workplace, hazards originated out of the workplace, etc.

Figure 1 below, shows the different stages where worker might be exposed to MNMs:

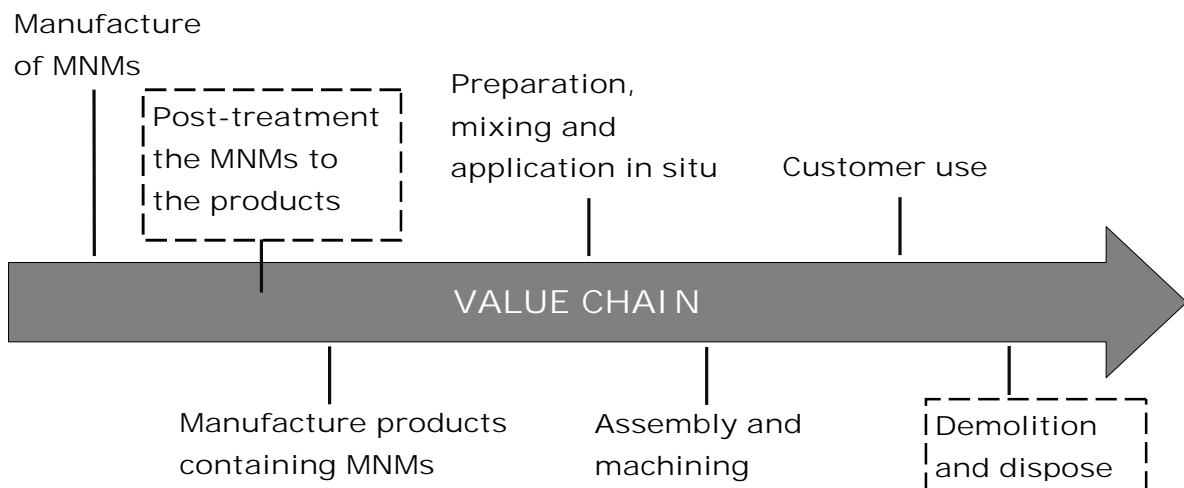


Figure 1: Value chain of MNMs

For a comprehensive hazard identification process, all potential occupational hazards should be identified, including hazards that are low-level hazards or with low exposure potential, or hazards already being controlled in the workplace.

Sources of information for the risk identification are:

- legal requirements and other requirements,
- the observation and examination of the workplace to detect possible sources of risk,
- knowledge of the perception about the risk of the personnel,
- review of the records of incidents and occupational illness,
- material data sheet,
- operating instructions,
- reports of national and international organizations,
- information of the activities,
- trends in the use of nanotechnology.

Besides, summarized information regarding toxicity of MNM is given in SCAFFOLD's Roadmap (SPD3). Also the information provided by the Toolkit will include this aspect in its module 1- Construction to create a training instrument for the companies.

4.3.1.2.2 Risk Evaluation

The analysis of the information gathered during the identification of MNM risk, can be approached by quantitative or qualitative methods. The lack of information, exposure limits, and specific regulation makes difficult the application of the quantitative analysis in most cases. In addition, current measure equipments, do not seem suitable for personal monitoring, and do not allow the discrimination between background ultra-fine particles and MNM particles generated during the process.

Accordingly, SCAFFOLD's Roadmap (SPD3) quotes the SCENIHR conclusion about risk assessment: "while risk assessment methodologies for the evaluation of potential risk of substances and conventional materials to man and the environment are widely used and are generally applicable to nanomaterials, specific aspects related to nanomaterials still require further development. This will remain so until there is sufficient scientific information available to characterize the harmful effects of nanomaterials on humans and the environment."

For the qualitative evaluation the organization must define a methodology that ensures to the analysis in terms of likelihood and consequences. This methodology must take into consideration the suitability of the existing controls in place to manage the risk, and the frequency and duration of the exposure, considering internal and external factors that could trigger the risk.

Once established likelihood and consequence levels, risk level must be determined, through the estimation of the likelihood of occurrence and the impact it could have. This likelihood and consequence criteria must be well-defined, in order to ensure consistent outcomes.

Likewise, tolerance risk criteria must be defined, establishing the level of risk, which will determine the controls that will lead to the elimination or the acceptable level of risk.

Furthermore, the hardness on the acquisition of accurate data for the risk evaluation must be a factor when it comes to settle the tolerance of a particular risk.

In terms of risk evaluation, must be included also the consultation and proper participation of workers, consider the legal requirements and others, layout and condition of the working environment, skills, capabilities and experience of people.

In addition, the organization should make sure that the risk evaluation considers exposition consequences in short and long term, as well as interdependence between different risks and sources.

4.3.1.3 Key Questions

4.3.1.3.1 General

Has your organization established, implemented and maintained a procedure for the ongoing identification of risks, assessment of their risk and determining the necessary controls?

4.3.1.3.2 MNMs Risk Identification

1. Has your organization defined a MNMS risk identification procedure?
2. How is your organization's methodology for MNMs risk identification defined with respect to its scope, nature and timing to ensure it is proactive rather than reactive?
3. How the methodology provide for the identification, prioritization and documentation of the MNMs risks and the application of the controls to be used?
4. Has your organization applied risk identification tools and techniques that are suited to its objectives and capabilities, and to the risks faced?

4.3.1.3.3 MNMs Risk Evaluation

1. Has your organization established, implemented and maintained a procedure for MNMs risk evaluation, so that the nature and level of risk is understood to prioritize the risks to be addressed and to facilitate decision making in the organization?
2. Has your organization defined criteria to be used to evaluate the significance of risk?
3. When defining risk criteria, how your organization has considered the establishment of the internal and external context?
4. When defining risk criteria, how your organization has considered whether combinations of multiple risks should be taken into account and, if so, how and which combinations should be considered?
5. Has your organization documented and communicated the MNMs Risk criteria?
6. Has your organization determining the consequences and their likelihood, and other attributes of the risk?

4.3.2 MNMs risk treatment

MNMs RMM report SPD14 text:

The organization shall establish, implement and maintain a procedure(s) for selecting one or more options for modifying risks, and implementing those options. Once implemented, treatments provide or modify the controls.

MNMs risk treatment options are not necessarily mutually exclusive or appropriate in all circumstances. The options can include the following:

- a) avoiding the MNMs risk by deciding not to start or continue with the activity that gives rise to the MNMs risk;
- b) taking or increasing the MNMs risk in order to pursue an opportunity;
- c) removing the MNMs risk source;
- d) changing the likelihood;
- e) changing the consequences;
- f) sharing the MNMs risk with another party or parties (including contracts and risk financing); and
- g) retaining the MNMs risk by informed decision.

Selecting the most appropriate risk treatment option involves balancing the costs and efforts of implementation against the benefits derived, with regard to legal, regulatory, and other requirements. The purpose of MNMs risk treatment plans is to document how the chosen treatment options will be implemented: the reasons for selection of treatment options, responsible, proposed actions, resources requirements, performances measures and timing and schedule.

The organization shall be a planned the risk treatment plans evaluation. It shall be periodic.

The monitoring and review shall be a planned part of the risk management process and involve regular checking or surveillance.

4.3.2.1 General

As the result of the MNM risk evaluation, certain risk levels will be deemed by the organization as acceptable and will require a monitoring of the existing controls. In other cases, risks levels will be considered as unacceptable, they will require a risk treatment in order to eliminate or reduce the level of risk to an acceptable one. So a MNM risk treatment plan must be prepared and implemented. This treatment plan shall be documented and subjected to ongoing monitoring and review.

4.3.2.2 Guidelines for implementation

Once the risks have been assessed, and unacceptable risks have been identified, treatment option(s), that aim to reduce the level of risk must be selected. There are three basic options for the risk treatment:

- Avoidance of the MNM risk, by not proceeding with the processes that involve such risk, or choosing an alternative activity or methodology that contains an acceptable level of risk.
- Transfer the MNM risk to an outside party (e.g. Outsourcing contract).
- Management of the MNM risk by; establishing mitigating or limiting controls and countermeasures, that will eliminate or reduce the level risk to an acceptable threshold by reducing the consequences of the risk if it happens, or reducing the likelihood of the risk.

For example, there are several entrance ways of the MNMs into the human body in the workplace: inhalation, dermal, digestive, etc. Among those ways, the most common and concerning is the inhalation. The preventive and protective measures are established. From risk assessment and most cases will be the same as those used to exposure control aerosols. The few experimental data of which is available to date indicate that the conventional ventilation along with filtration should be effective for the control of these materials.

In general must pay special attention to:

- The amount of matter (mass / number of particles). Higher number means greater risk of exposure.
- In the case of dry powder or not. In the first case it is easier to disperse in the environment.
- The level of containment of the process. The more closed, the risk of exposure is lower.
- The exposure time.
- The present trend to agglomerate.

The measures taken shall be technical, organizational and personal protection as the Roadmap report SPD3 points out. Examples of operations in which the potential aerosol generation may require technical measures:

- Works with nanomaterials in liquid phase during transfer operations, mixtures or those in high agitation occurring.
- Generation of particles by gas stream.
- Management nanostructure powders.
- Maintenance of equipment and manufacturing processes nanomaterials.
- Cleaning the exhaust systems used in capturing nanoparticles.

The following summarizes the main measures technical nature, organizational measures or personal protection, that they are still the traditional safety and industrial hygiene:

- Replacing substances, processes and equipment.
- Design.
- Process isolation or enclosure.
- Ventilation.
- Safe works practices.
- Personal protection (gloves and mask).
- Spill control (use a vacuum)
 - Use a vacuum cleaner fitted with a HEPA filter.
 - Moisten the powder.
 - Use wet wipes
 - Use adsorbent if the spill is a liquid.
 - Manage the material generated in the collection of spill as a residue.
 - Assess the need for the use of PPE. Exposure inhalation and dermal will probably be the greatest risk.

When selecting the best MNM risk treatment option, the organization must consider the impact of adding this option as a new control, the cost of implementation versus the benefits, and the compatibilities with the legal requirements and other requirements.

The chosen options should be incorporated in a MNM risk Treatment Plan. The MNM risk treatment plan shall be documented (indicating the proposed actions and the reasons for selecting them, required resources, person responsible, including a deadline, timing and schedule for actions to be completed). The options will be monitored and reviewed in order to ensure the proper implementation and the efficacy and efficiency of the measures.

4.3.2.3 Key Questions

1. Has your organization established, implemented and maintained a procedure for selecting one or more options for modifying risks, and implementing those options?
2. Are the risk treatment options including the following:
 - a) avoiding the MNMs risk by deciding not to start or continue with the activity that gives rise to the MNMs risk;
 - b) taking or increasing the MNMs risk in order to pursue an opportunity;

- c) removing the MNMs risk source;
 - d) changing the likelihood;
 - e) changing the consequences;
 - f) sharing the MNMs risk with another party or parties (including contracts and risk financing); and
 - g) retaining the MNMs risk by informed decision.
3. Has your organization selected the most appropriate risk treatment options involves balancing the costs and efforts of implementation against the benefits derived, with regard to legal, regulatory, and other requirements?
 4. Has your organization risk treatment plans documented how the chosen treatment options will be implemented: the reasons for selection of treatment options, responsible, proposed actions, resources requirements, performances measures and timing and schedule?
 5. Has your organization planned periodically the risk treatment plans evaluation?
 6. Has your organization planned the monitoring and review?
 7. Has your organization verified the conformity of the MNMs risk treatment plans?
 8. Has your organization documented and kept the results of MNMs risks identification, evaluation and treatment assessments and determined controls up-to-date?

4.3.3 Legal and other requirements

MNMs RMM report SPD14 text:

The organization shall establish, implement and maintain a procedure(s) for identifying and accessing the legal and other MNMs RMM requirements that are applicable to it.

The organization shall ensure that these applicable legal requirements and other requirements to which the organization subscribes are taken into account in establishing, implementing and maintaining its MNMs RMM.

The organization shall keep this information up-to-date.

The organization shall communicate relevant information on legal and other requirements to persons working under the control of the organization, and other relevant stakeholders.

4.3.3.1 General

The legal and other requirements identification pursues the promotion of the knowledge and comprehension of legal responsibilities and the permanent updating of the legal and other requirements related to the MNM risks.

4.3.3.2 Guidelines for implementation

The organization needs to ensure the maintenance of an updated knowledge, with an actual understanding of the legal and other requirements (contractual conditions, industry bodies or corporate partners, agreements with parties, authorities, employees, etc.), associated to the MNM risks. The identification of these requirements must take into account both, current and future activity.

Nowadays there is no European Legislation applicable to MNMs and also the European countries don't have a specific regulation, therefore is very important to evaluate other requirements to be subscribed voluntarily as good practices by the companies using MNMs.

SCAFFOLD's Roadmap for occupational safety in relation with manufactured nanomaterials (MNMs) in the construction sector (SPD3), indicates that concerning regulations on Health and Safety in EU legislation, the Chemicals working party set up under the Advisory Committee on Safety and Health at Work is working on a draft opinion on risk assessment and management of nanomaterials at the workplace, to be subsequently endorsed by the Advisory Committee. A final assessment on a review of occupational health and safety legislation will be made by 2014 in the light of these activities and respective conclusions.

Besides the identification of these requirements, the organization requires to ensure the access and the updating of the current and future legal requirements and other requirements.

The organization must identify the employees and stakeholders that shall be informed about these requirements and ensure that the information related to the MNM risk of their concern is communicated.

4.3.3.3 Key Questions

1. Has your organization established, implemented and maintained a procedure for identifying and accessing the legal and other requirements applicable MNMs RMM?
2. Has the organization communicated relevant information about legal requirements and other requirements to persons working under the control and other stakeholders?

4.3.4 Objectives and programmes

MNMs RMM report SPD14 text:

4.3.4.1 Objectives, goals and programmes of MNMs RMM

The organization shall establish, implement and maintain documented objectives, goals and programmes of MNMs RMM at relevant functions and levels within the organization.

The objectives and goals shall be measurable, where practicable, and consistent with the MNMs Risk management policy, including the commitments to the prevention of injury and ill health, to compliance with applicable legal requirements and with other requirements to which the organization subscribes, and to continual improvement.

When establishing and reviewing its objectives, an organization shall take into account the internal and external context, the legal requirements and other requirements to which the organization subscribes, and its MNMs risks. It shall also consider its technological options, its financial, operational and business requirements, and the views of relevant stakeholders.

The organization shall establish, implement and maintain a programme(s) for achieving its objectives. Programme(s) shall include as a minimum:

- a) designation of responsibility and authority for achieving objectives at relevant functions and levels of the organization; and
- b) the means and time-frame by which the objectives are to be achieved.

The programme(s) shall be reviewed at regular and planned intervals, and adjusted as necessary, to ensure that the objectives are achieved.

4.3.4.2 MNMs risk management planning

Top management shall ensure that:

- a) the planning of the MNMs RMM is carried out in order to meet the requirements given in 4.1 as well as the objectives, goals and programmes, and
- b) the integrity of the MNMs RMM is maintained when the changes to the MNMs RMM are planned and implemented.

4.3.4.1 General

Aligned to the commitment to prevention of injury and ill health, and continuous improvement, the organization must establish objectives that satisfy these commitments. These objectives must be documented at relevant functions and levels in the organization.

4.3.4.2 Guidelines for implementation

RMM objectives must be defined using as sources of information:

- MNM risk assessment,
- incident investigation,
- internal audits results,
- management review,
- workers opinions,
- technological options,
- financial, operational and business requirements,
- legal requirements and other requirements,
- internal and external context.

Objectives must be reasonable and reachable, so that the organization could achieve them. They must be measurable and if it is possible quantified, defining indicators to follow the progress on the implementation of the objective.

Once RMM objectives have been selected, they should be communicated to the person (s) relevant to the success in the consecution of the objectives.

All these objectives should be identified in the RMM management program, providing allocation of the accountability, responsibility and authority for each task that will lead to the achievement of the objective, resources and time-frames which the objectives are to be achieved.

The RMM management programme should be revised at regular planned intervals as necessary.

Examples or objectives to improve the MNMs risk prevention are:

- eliminate the exposition to MNMs (products substitution),
- reduce the exposition to MNMs (organizational changes),
- improve the use of controls (PPE substituted by collective systems),
- enhance awareness (specific training)

4.3.4.3 Key Questions

1. Has the organization established implemented and maintained documented objectives, goals and programmes of MNMs RMM at relevant functions and levels within the organization?
2. Are the objectives and goals measurable?
3. And are the objectives consistent with the policy, including health and safety committees, and the legal and other requirements which the organization subscribes, and to continual improvement?
4. When establishing and reviewing objectives, does the organization take into account legal and other requirements which the organization subscribes and MNMs risks?
5. When establishing and reviewing objectives, does the organization take into account technological options and funding, and operational and business requirements, and the points of view of relevant stakeholders?
6. Has the organization established, implemented and maintained a programme(s) to achieve the objectives MNMs?
7. Are defined responsibilities and deadlines for achieving the objectives?
8. Does the program is periodically reviewed at planned intervals and adjusted if necessary to achieve the objectives?
9. Has your organization verified the conformity of the programme(s) to achieve the objectives MNMs?

4.4 Implementation and operation

MNMs RMM report SPD14 text:

4.4.1 Resources, roles, responsibility, accountability and authority. General

Top management shall take ultimate responsibility for Occupational, health and safety and MNMs RMM.

Top management shall demonstrate its commitment by:

- a) ensuring the availability of resources essential to establish, implement, maintain and improve the MNMs RMM.

NOTE 1 Resources include human resources and specialized skills, organizational infrastructure, technology and financial resources.

- b) defining roles, allocating responsibilities and accountabilities, and delegating authorities, to facilitate effective MNMs RMM; roles, responsibilities, accountabilities, and authorities shall be documented and communicated.

The organization shall appoint a member(s) of top management with specific responsibility for MNMs RMM, irrespective of other responsibilities, and with defined roles and authority for:

- a) ensuring that the MNMs RMM is established, implemented and maintained in accordance with this model;
- b) ensuring that reports on the performance of the MNMs RMM are presented to top management for review and used as a basis for improvement of MNMs RMM.

NOTE 2 The top management appointee (e.g. in a large organization, a Board or executive committee member) may delegate some of their duties to a subordinate management representative(s) while still retaining accountability.

The identity of the top management appointee shall be made available to all persons working under the control of the organization.

All those with management responsibility shall demonstrate their commitment to the continual improvement of MNMs RMM performance.

The organization shall ensure that persons in the workplace take responsibility for aspects of MNMs RMM over which they have control, including adherence to the organization's applicable MNMS RMM requirements.

4.4.1.1 Responsibility and authority

Top management shall ensure that responsibilities and authority are defined and communicated within the organization.

4.4.1.2 Management representative

Top management shall appoint a member of the organization's management who, irrespective of other responsibilities, shall have responsibilities and authority that includes:

- a) ensuring that processes needed for the MNMs RMM are established, implemented and maintained,
- b) reporting to top management on the MNMs RMM performance and any need for improvement, and
- c) ensuring the promotion of awareness of MNMs RMM requirements.

NOTE: The responsibility of a management representative can include liaison with external stakeholders on matters relating to MNMs RMM.

4.4.1.3 Infrastructure

The organization shall determine, provide and maintain the infrastructure needed to achieve conformity to MNMS RMM requirements. Infrastructures includes, as applicable,

- a) buildings, workspace and associated utilities;
- b) process equipment (both hardware and software), and
- c) supporting services (such as transport, communication or information systems).

4.4.1 Roles, responsibility and authority

4.4.1.1 General

In order to achieve the requirements of the MNMs RMM top management must provide the necessary resources for the effectiveness of the Occupational, Health and Safety system and the MNMs RMM, defining and establishing roles, responsibilities, accountabilities and authorities. The model effectiveness can be evaluate with the provided data as the compliance degree for the objectives that permit to assure if the resources have been sufficient for the different action development.

4.4.1.2 Guidelines for implementation

Roles, responsibilities, accountabilities and authorities for personnel involved in MNM risk must be defined, documented and communicated (for example: function manual, working sheets, organization chart development, etc.). Furthermore, the organization must ensure that personnel take accountability for Occupational, Health and Safety and the MNMs RMM related issues, under their control.

In order to ensure the establishment, implementation and maintenance of MNMs RMM, the organization shall name one or various members from the top management with authority for establish, implement and maintain the MNMs RMM, as well as brief the top management about the evolution of the MNMs RMM by the review of the MNMs RMM, ensuring the continual improvement. The responsible person to implement the RMM shall be part of the executive management committee in order to integrate the MNMs RMM into organization management.

The name of the person(s) appointee for the role of Management representative must be made available for the employees.

Besides, the organization must identify, provide, and maintain the required infrastructure to achieve de MNMs RMM requirements (for example: software applications, on site break, etc.).

4.4.1.3 Key Questions

1. Does the Top Management demonstrate its commitment ensuring that resources essential to establishing; maintaining and improving the MNMs RMM are available?
2. Has your organization determinate, provided and maintained the infrastructure needed to achieve conformity to MNMs RMM requirements?
3. Are the roles, responsibility, accountabilities and authorities defined, documented and communicated?
4. Has your organization appointed a member(s) from Top Management with specific responsibilities and defined roles and authority for ensuring that reporting on the

performance of MNMs RMM is presented to Top Management for review and used as the basis to identify improvements to the MNMs RMM?

5. Does your organization ensure that persons in the workplace take responsibility for the aspects of Occupational, Health and Safety over which they have control, including adhering to the organization's applicable MNMs RMM requirements?

4.4.2 Competence, training and awareness

MNMs RMM report SPD14 text:

The organization shall ensure that any person(s) under its control performing tasks that can impact on occupational, health and safety matters related to MNMs risks is (are) competent on the basis of appropriate education, training or experience, and shall retain associated records.

The organization shall identify training needs associated with its MNMs risks and its MNMs RMM. It shall provide training or take other action to meet these needs, evaluate the effectiveness of the training or action taken, and retain associated records.

The organization shall establish, implement and maintain a procedure(s) to make persons working under its control aware of:

- a) the MNMs risk consequences, actual or potential, of their work activities, their behavior,
- b) their roles and responsibilities and importance in achieving conformity to the MNMs risk management policy and procedures and to the requirements of the MNMs RMM, including emergency preparedness and response requirements;
- c) the potential consequences of departure from specified procedures.

Training procedures shall take into account differing levels of:

- a) responsibility, ability, language skills and literacy; and
- b) risk.

4.4.2.1 General

The organization must ensure the competence of employees in those tasks which may involve MNM risk, taking as basis, education, training or adequate experience. The organization is responsible for the assurance of the correct competence and awareness of employees.

4.4.2.2 Guidelines for implementation

The organization must establish operative competence for the employees and should have documented procedures for ensuring this competence of personnel to carry their designated functions. This could be done through meetings, informative sessions or with the direct application of specific collective agreement, etc. (Legal requirements shall be taken into account when the organization defines the operative competence for personnel)

Accordingly, the organization should identify the training needs and provide the necessary means to acquire it. When defining the training program responsibility, ability and literacy of the trainees and the risk to which they will be exposed must be taken into account.

Initial and continue updated training shall be included, besides the specific training for special workers or with restrictions.

Once the training is provided its effectiveness must be evaluated, and keep the records of the evaluation. (Examples of these records are: CV, academic qualifications, informative session assistance certificates, workshop assistances, etc.).

Likewise, the personnel must be aware of

- the consequences for the health and safety of their activities and behavior,
- their functions and responsibilities and the importance of achieving the conformity with the MNMs risk management policy and requirements of the MNMs RMM,
- the potential consequences of the deviation from the established procedures.

4.4.2.3 Key Questions

1. Has your organization defined the job profiles related with MNMs RMM?.
2. Are all persons working for them, or their control with MNMs (e.g. staff, contractors, shift workers, casual staff, labour hire etc), competent to undertake the tasks that can impact on Occupational, Health and Safety? Note: Assessment of competence can be on the basis of appropriate education, training and/or experience?
3. Has training, or other actions required to meet these needs been delivered, the effectiveness of the training evaluated and associated records retained?
4. Has a procedure(s) been established, implemented and maintained to ensure that the people working for, or under the control of your organization are aware of
 - a) the Occupational, Health and Safety consequences, actual or potential, of their work activities, their behavior and the Occupational, Health and Safety benefits of improved personal performance?,
 - b) their roles and responsibilities and importance of conforming to the MNMs Risk Management policy, procedures and to the requirements of their MNMs RMM including emergency preparedness and response requirements?,
 - c) do they understand the potential consequences if they deviate from the specified procedures?

4.4.3 Communication, participation and consultation

MNMs RMM report SPD14 text:

4.4.3.1 Communication and information

The organization shall establish, implement and maintain with the stakeholders, internal and external communication and reporting mechanisms and procedures in order to

- a) internal communication among the various levels and functions of the organization;
- b) communication with contractors and other visitors to the workplace;
- c) receiving, documenting and responding to relevant communications from external stakeholders.

The communication and reporting mechanisms should, where appropriate, include processes to consolidate risk information from a variety of sources, and may need to consider the sensitivity of the information.

4.4.3.2 Participation and consultation

The organization shall establish, implement and maintain a procedure(s) for:

- a) the participation of workers by their:
 - appropriate involvement in hazard identification, risk assessments and determination of controls;
 - appropriate involvement in incident investigation;
 - involvement in the development and review of MNMs RMM policies and objectives;
 - consultation where there are any changes that affect their Occupational, Health and Safety related to MNMs risks;
 - representation on Occupational, Health and Safety related to MNMs matters.

Workers shall be informed about their participation arrangements, including who is their representative(s) on MNMs matters.

- b) consultation with contractors where there are changes that affect their Occupational, Health and Safety related to MNMs risks.

The organization shall ensure that, when appropriate, relevant external stakeholders are consulted about pertinent Occupational, Health and Safety matters related to MNMs risks.

Effective external and internal communication and consultation should take place to ensure that those accountable for implementing the MNMs RMM and stakeholders understand the basis on which decisions are made, and the reasons why particular actions are required.

4.4.3.1 General

The organization must define the mechanisms and procedures for internal, external and contractors and visitors communication, participation and consultation in order to encourage and guarantee the participation in good practices, the support of the MNM RMM policy and objectives.

4.4.3.2 Guidelines for implementation

For an effective internal communication, it must be ascendant, descendent and cross-sectional, including all employees involve on the development and review of the MNM management policy and risk management procedures and taking into account for instance the prevention committee and the workers representatives' roles. Employees must:

- Be informed of the MNM risk, preventive and protective measures for the MNM risks, and emergency response procedures, etc.
- Be consulted about Occupational, Health and Safety related to MNMs risks issues at the work place.
- Be represented on Occupational, Health and Safety related to MNMs risks issues.
- Be informed about their representative on Occupational, Health and Safety related to MNMs risks issues.

As regards contractor and visitors communication, should consist on an exchange of information related to the operational control, legal and other requirements, MNM risk and associated protection measures, incident investigation, and additional other information, as needed during the performance of the works such as information of other contractors at the work place. This information can be transmitted by brochures in the control point/entrance/access for visits or clients and in the contractual documents for suppliers and contractors.

External parties shall be informed and consulted about Occupational, Health and Safety related to MNMs risks, if necessary. Besides, the organization must establish mechanisms for receiving, documenting and answering relevant communications form external parties. It is very important to define the information to be disseminated and the means/formats to be used (for example: risk information on products for the users or risk information to neighborhood through official communications from authorities).

4.4.3.3 Key Questions

1. Has your organization established, implemented and maintained procedure(s) for internal and external communication?
2. Has your organization established, implemented and maintained procedure(s) for communication with contractors and other visitors to the workplace?

3. Has your organization established, implemented and maintained procedure(s) for receiving, documenting and responding to relevant communication from external interested parties?
4. Has your organization established, implemented and maintained procedure(s) for the participation of workers by their:
 - appropriate involvement in hazard identification, risk assessments and determination of controls;
 - appropriate involvement in incident investigation;
 - involvement in the development and review of MNMs RMM policies and objectives;
 - consultation where there are any changes that affect their Occupational, Health and Safety related to MNMs risks;
 - representation on Occupational, Health and Safety related to MNMs matters.

4.4.4 Documentation

MNMs RMM report SPD14 text:

4.4.4.1 General

The MNMs RMM documentation shall include:

- a) the MNMs risk management policy and objectives;
- b) description of the scope of the MNMs RMM;
- c) description of the main elements of the MNMs RMM and their interaction, and reference to related documents;
- d) documents, including records, required by the model; and
- e) documents, including records, determined by the organization to be necessary to ensure the effective planning, operation and control of processes that relate to the management of its MNMs risks.

NOTE It is important that documentation is proportional to the level of complexity and risks concerned and is kept to the minimum required for effectiveness and efficiency.

4.4.4.2 MNMs Risk manual

The organization shall establish and maintain a MNMs risk manual that includes

- a) the scope of the MNMs RMM,
- b) the description of the main elements of the MNMs RMM and their interaction, and reference to related documents;
- c) the main types of MNMs risks and MNMs risk criteria;
- d) the documented procedures established for the MNMs RMM, or reference to them.

4.4.4.1 General

The organization must establish, and maintain updated, a series of documents to ensure consistent application of the MNMs RMM. These documents must establish the responsibilities, authorities, roles, Scope o of the MNMs RMM, Policy, etc.

The MNMs RMM documentation shall be as specific as possible and suitable for the complexity of the organization.

4.4.4.2 Guidelines for implementation

The MNMs RMM must include the following documents:

- MNM risk management Policy (see 4.2.2).
- MNM RMM Manual.
- Procedures.
- On site construction work plans.
- Objectives (see 4.3.4).
- MNMs risk criteria (see 4.3.1).
- Records (see 4.5.4).

The extent of the MNMs RMM documentation shall be as specific as possible and consistent with the:

- Size of the organization.
- Associated risks.
- Complexity of the processes.
- Competence and level of literacy of the personnel.

The documentation must be continually updated and distributed or available to all affected members of the organization. In construction sector companies it's vital to establish the distribution for the subcontractors that used to be regulated in the Project documents (for example, construction Works plans for health and safety).

4.4.4.3 Key Questions

Does your organization's MNMs RMM documentation include:

- a) the MNMs risk management policy and objectives;
- b) description of the scope of the MNMs RMM;

- c) description of the main elements of the MNMs RMM and their interaction, and reference to related documents;
- d) documents, including records, required by the model; and
- e) documents, including records, determined by the organization to be necessary to ensure the effective planning, operation and control of processes that relate to the management of its MNMs risks.

Does the MNMS risk manual include

- a) the scope of the MNMs RMM;
- b) the description of the main elements of the MNMs RMM and their interaction, and reference to related documents;
- c) the main types of MNMs risks and MNMs risk criteria;
- d) the documented procedures established for the MNMs RMM, or reference to them.

4.4.5 Control of documents

MNMs RMM report SPD14 text:

Documents required by the MNMs RMM shall be controlled. Records are a special type of document and shall be controlled in accordance with the requirements given in 4.5.4.

The organization shall establish, implement and maintain a procedure(s) to:

- a) approve documents for adequacy prior to issue;
- b) review and update as necessary and re-approve documents;
- c) ensure that changes and the current revision status of documents are identified;
- d) ensure that relevant versions of applicable documents are available at points of use;
- e) ensure that documents remain legible and readily identifiable;
- f) ensure that documents of external origin determined by the organization to be necessary for the planning and operation of the OH&S management system are identified and their distribution controlled; and
- g) prevent the unintended use of obsolete documents and apply suitable identification to them if they are retained for any purpose.

4.4.5.1 General

The MNMs RMM documentation shall be controlled by the organization, in order to guarantee their correct use by all members of the organization.

4.4.5.2 Guidelines for implementation

The control of the MNMs RMM documentation should ensure the location and availability of documents in the point of use; the review and approval and adequate identification and preservation. At any moment, the person responsible for each department/area or the model responsible shall ensure that last version of this documentation is used/consulted. New technologies, including intranet, can be used. In construction on site works or manufacturing processes selected applicable documentation can be accessible in the store section or in the plants.

All documents must remain legible, dated and properly conserved.

These control must be extended to other documentation, applicable to the organization, but externally developed, such as contractors procedures, client requirements, product security sheets, equipment/machines manuals etc.

4.4.5.3 Key Questions

1. Has your organization established, implemented and maintained a procedure(s) for controlling all documents required by this MNMs RMM?
2. Does it prevent the unintended use of obsolete documents and apply suitable identification to them if they are retained for any purpose?

4.4.6 MNMs operational control

MNMs RMM report SPD14 text:

The organization shall determine those operations and activities that are associated with the identified hazard(s) where the implementation of controls is necessary to manage the MNM's risk(s). This shall include the management of change (see 4.3.1).

For those operations and activities, the organization shall implement and maintain:

- a) documented procedures to cover situations where their absence could lead to deviations from its MNMs RMM policy and objectives;
- b) operational criteria in the procedures;
- c) operational controls, as applicable, for the organization and its activities;
- d) controls related to contractors and other visitors to the workplace?
- e) controls related to the goods and services used by the organization and communication applicable procedures and requirements for stakeholders and;
- f) controls related to the stakeholders of the organization.

4.4.6.1 General

Once the risk assessment has been performed, operational measures must be implemented in order to manage the associated risk, leading them to the acceptable level, and fulfill the legal requirements and other. Summing up, the main objective of the operational controls is the risk management to comply with the MNMs RMM policy and objectives.

4.4.6.2 Guidelines for implementation

Operational preventive and protective measures must be established as necessary to eliminate, reduce or control the MNM risk, not only for the employees but also for contractors, and other external personnel such as public or visitors, in order to ensure their own safety, the facilities integrity and the employees' protection.

The Roadmap report SPD3 establishes that exposure control measures will be at most cases the same as those used to aerosol control exposure.

The measures taken must be technical, organizational and personal protection.

a) Main Technical measures are:

- Replacing substances, processes and equipment: e.g. priority of wet process versus dry process.
- Design.
- Process isolation or enclosure: perform the operation in closed circuits or confined areas equipped with ventilation systems.
- Ventilation: equipped with a filter of high efficiency particulate (HEPA) in order to prevent nanomaterials pass to the environment.

b) Organizational measures:

Safe Work Practices: some labor standard measures can help minimize exposure to nanomaterials such as cleaning working areas by the end of every shift, avoiding drinking and eating in the work place, promoting hygienic habits like hand washing before eating or leave the job, spill control, etc.

c) Personal Protection:

If properly applied technical measures exposed, is unlikely to be necessary personal protection. However, based on professional judgment, the result of risk assessment and taking into account that the use of personal protection must be the last resort, respiratory and dermal protection could be recommended.

Implemented control measures may require changes due to purchases and acquisitions or modifications (facilities, equipment, new or different chemicals, new PPE). Besides, procedures to determine these changes should be established.

4.4.6.3 Key Questions

1. Has your organization determined the operations and activities that are associated with the identified risk(s) and implementation of controls are necessary to manage the MNMs risk(s)?
2. Has your organization implemented and maintained documented procedures, to cover situations where their absence could lead to deviations from the MNMs RMM policy and objectives?
3. Has your organization implemented and maintained operational control, as applicable, to your organization and its activities?
4. Has your organization implemented and maintained controls related to contractors and other visitors to the workplace?
5. Has your organization implemented and maintained controls related to purchased goods, equipment and services used by the organization and communication applicable procedures and requirements for stakeholders?
6. Has your organization implemented and maintained controls related to the stakeholders of the organization?

4.4.7 MNMs emergencies preparedness and response

MNMs RMM report SPD14 text:

4.4.7.1 MNMs incidents preparedness and response

The organization shall establish, implement and maintain a procedure(s) to identify the potential for emergency situations related to MNMs risks and to respond to such emergency situations.

The organization shall respond to actual emergency situations and prevent or mitigate associated adverse occupational, health and safety matters related to MNMs risks consequences.

In planning its emergency response the organization shall take account of the needs of relevant stakeholders.

The organization shall also periodically test its procedure(s) to respond to emergency situations related to MNMs risks, where practicable, involving relevant stakeholders as appropriate.

The organization shall periodically review and, where necessary, revise its emergency preparedness and response procedure(s), in particular, after periodical testing and after the occurrence of emergency situations (see 4.5.3).

4.4.7.2 Recuperation from an organization activity interruption

The organization shall establish a procedure (s) that ensures the continuity of the activities of the organization to events that are likely to interrupt them.

Take into account especially those activities related to MNMs risk that support the products and / or services of the organization.

These procedures shall ensure the resilience of the organization with minimum conditions for continuing to operate in the most effective manner.

Recovery procedures in activity to an interruption of it must determine:

- a) the minimum conditions necessary for the continuation of the activities of the organization;
- b) the period within which the activity must be recovered to the conditions set after an interruption;
- c) the steps and actions to take when the interrupt occurs ,
- d) protocols appropriate internal and external communication ;
- e) the persons responsible for managing the recovery of such activities ;
- f) the resources needed to deal with the recovery of activity.

The organization shall periodically review and modify where necessary, procedures for recovery of activity to an interruption of the activity of the organization, taking into account the needs of relevant stakeholders as appropriate.

NOTE 1. The ISO 22301 standard specifies the minimum requirements for a management system for business continuity of an organization.

4.4.7.1 General

The primary objective of the MNMs emergencies preparedness and response is to ensure the ability of the organization for an effective response to emergency situations, preventing or mitigating adverse associated consequences.

4.4.7.2 Guidelines for implementation

The organization must perform a primary identification of the potential emergencies related to the Occupational, Health and Safety related to MNMs matters, which may involve workers and other interested parties.

The organization must update the identification of the potential emergency situations due to changes that could lead into new potential emergency situations, such as: facilities and processes modifications, new legal requirements, and others determinants, under both normal and abnormal situations.

Once the potential emergency situations have been identified (e.g. accidental releases, spills, discharges or fire involving MNMs), an Emergency Response Plan shall be developed, taking into account not only the internal personnel but also, interested parties (contractors, visitors, emergency services, neighbors, etc.) Requirements in applicable legislation and regulations must be taken into consideration, particularly depending on the nature of the construction works, they can have tailored plans in each phase of project or work.

Periodically, the organization shall perform periodical test of the Emergency Response Plan, covering all possible emergency situations. If it is possible, interested parties should be involve in the periodical test. Records of these tests shall be kept.

Emergency Response Plan shall be periodically reviewed especially after an emergency situation, and testing.

Additionally the organization should be able to restore the activities back to normal, in case of emergency. Therefore, the organization shall establish mechanisms to achieve the continuity of activities. e.g.: to eliminate or minimize the interruptions due to emergency situations, all people of the organization must be flexible, and be able to perform multiple task, so a previous training is needed.

In order to ensure the effectiveness of the recovery mechanisms, the organization, shall perform a periodical review.

4.4.7.3 Key Questions

1. Has your organization established, implemented and maintained a procedure(s) to identify the potential emergency situations related to MNMs risks? and to response to such emergency situations?
2. Has your organization taken into account the needs of relevant interested parties when it plan its emergency response?
3. Has your organization test these procedure(s) to be able to respond to these emergency situations?
4. Does your organization periodically review, revise and update its emergency preparedness and response procedure(s) after the completion of the scheduled test and after the occurrence of an emergency situation, where necessary? (see 4.5.3)
5. Has your organization established a procedure (s) that ensures the continuity of the activities of the organization to events that are likely to interrupt them?
6. Do these procedures ensure the resilience of the organization with minimum conditions for continuing to operate in the most effective manner?
7. Has your organization periodically reviewed and modified, where necessary, procedures for recovery of activity to an interruption of the activity of the organization, taking into account the needs of relevant stakeholders as appropriate?

4.5 Checking

4.5.1 Monitoring and measurements of MNMs risk management activities

MNMs RMM report SPD14 text:

The organization shall establish, implement and maintain a procedure(s) to monitor and measure MNMs RMM performance on a regular basis. This procedure(s) shall provide for:

- a) performance measures that track conformity with the programs, controls and operational criteria as well as the qualitative and quantitative measures appropriate to the needs of the organization;
- b) monitoring of the extent to which the organization's MNMs RMM objectives are met;
- c) monitor the effectiveness of the controls (for health as well as for safety related to MNMs risks);
- d) proactive measures of performance that monitor conformance with the MNMs RMM programme(s), controls and operational criteria;
- e) reactive measures of performance that monitor ill health, incidents (including incidents, accidents, near-misses, etc.), and other historical evidence of deficient MNMs RMM performance;
- f) detecting changes that may occur in the context of the organization, including changes to MNMs risk criteria and the risk itself which can require revision of corrective and preventive actions and priorities;
- g) recording of data and results of monitoring and measurement sufficient to facilitate subsequent corrective action and preventive action analysis;
- h) identifying emerging MNMs risks.

The responsibilities of performance measurement and monitoring shall be clearly defined.

If equipment is required to monitor or measure performance, the organization shall establish and maintain procedures for the calibration and maintenance of such equipment, as appropriate. Records of calibration and maintenance activities and results shall be retained.

4.5.1.1 General

MNMs risks management shall be monitored and measured to evaluate the effectiveness of the MNM RMM, to this end, the organization shall define key performance measurements.

4.5.1.2 Guidelines for implementation

For an effective implementation, the organization shall establish procedures which guarantee the regular and systematic monitoring and measurement of the risk management activities. These procedures may include qualitative or quantitative measurement, as appropriate.

Examples of measurements are:

- Measurement of the occupational exposure to MNMs.
- Health and Safety performance indicators (related to the exposure to MNMs).
- Employees health surveillance.
- Systematic workplace inspections.
- Effectiveness of control measurements.
- Effectiveness of awareness and training.
- Compliance with legal and other requirements.

Based on the MNM risk level, and legal and other requirements, the organization may establish and plan an Inspection Programme, indicating:

- Elements to monitor.
- How often monitoring shall take place.
- Responsible for the monitoring.
- Acceptance/ rejection criteria.
- Sample significance.
- Record keeping.

If measurement equipment is used for the monitoring, the organization should guarantee the proper use and conservation state and updated verification and calibration. Records of these activities must be kept.

If monitoring is contracted to a third party, the organization may also confirm the proper use and conservation state and updated verification and calibration of the equipment and keep records of these evidences.

4.5.1.3 Key Questions

1. Has your organization established, implemented and maintained a procedure(s) to monitor and measure MNMs RMM performance?
2. Does the procedure(s) provide for performance measures that track conformity with the programs, controls and operational criteria as well as the qualitative and quantitative measures appropriate to the needs of the organization?
3. Does the procedure(s) provide for monitoring of the extent to which the organization's MNMs RMM objectives are met?
4. Does the procedure(s) provide for monitor the effectiveness of the controls (for health as well as for safety related to MNMs risks)?

5. Does the procedure(s) provide for proactive measures of performance that monitor conformance with the MNMs RMM programme(s), controls and operational criteria?
6. Does the procedure(s) provide for reactive measures of performance that monitor ill health, incidents (including incidents, accidents, near-misses, etc.), and other historical evidence of deficient MNMs RMM performance?
7. Does the procedure(s) provide for detecting changes that may occur in the context of the organization, including changes to MNMs risk criteria and the risk itself which can require revision of corrective and preventive actions?
8. Does the procedure(s) provide for recording of data and results of monitoring and measurement sufficient to facilitate subsequent corrective action and preventive action analysis?
9. Does the procedure(s) provide for identifying emerging MNMs risks?
10. How monitoring and measuring equipment is calibrated or verified and maintained (procedure)? Are calibration or verification records retained?
11. Are the equipments calibrated or verified and maintained (procedure)? Are calibration or verification records retained?
12. Does the organization define clearly the responsibilities of performance measurement and monitoring?

4.5.2 Legal compliance evaluation

MNMs RMM report SPD14 text:

Consistent with its commitment to compliance, the organization shall establish, implement and maintain a procedure(s) for periodically evaluating compliance with applicable legal requirements (see 4.3.2).

The organization shall keep records of the results of the periodic evaluations.

NOTE. The frequency of periodic evaluation may vary for differing legal requirements.

The organization shall evaluate compliance with other requirements to which it subscribes (see 4.3.2). The organization may wish to combine this evaluation with the evaluation of legal compliance referred to in 4.5.2.1 or to establish a separate procedure(s).

The organization shall keep records of the results of the periodic evaluations.

NOTE The frequency of periodic evaluation may vary for differing other requirements to which the organization subscribes related to MNMs risks.

4.5.2.1 General

Once the organization has identified the legal and other requirements (see 4.3.3) an evaluation of compliance must be performed as part of its commitment established on MNM RMM policy (see 4.2.2).

4.5.2.2 Guidelines for implementation

The organization must define a procedure to ensure the periodical evaluation of compliance with legal and other requirements. The periodicity of this evaluation must be consistent with MNMs risk, size of organization, stakeholders concern. Usually these evaluation shall be made annually.

Input elements for the legal compliance evaluation are: audits, inspections, construction works on site visits, new studies, conclusions and results about MNMs, etc. This evaluation might be integrated with other evaluation activities performed.

The organization shall keep records of the result of the evaluation.

4.5.2.3 Key Questions

1. Has your organization established, implemented and maintained a procedure(s) for periodically evaluating its compliance with the applicable legal and other requirements identified in clause 4.3.2 of this standard?
2. Has your organization evaluated its compliance with other requirements identified in clause 4.3.2 of this standard?
3. Are the records of the results of these periodic evaluations maintained?

4.5.3 Incident investigation, nonconformity, corrective action and preventive action

MNMs RMM report SPD14 text:

4.5.3.1 Event and incident investigation

The organization shall establish, implement and maintain a procedure(s) to record, investigate and analyze event and incidents in order to:

- a) determine underlying MNMs RMM deficiencies and other factors that might be causing or contributing to the occurrence of incidents;
- b) improve the MNMs risk identification, evaluation and treatment process;
- c) identify the need for corrective action;

- d) identify opportunities for preventive action;
- e) identify opportunities for continual improvement;
- f) communicate the results of such investigations.

The investigations shall be performed in a timely manner.

Any identified need for corrective action or opportunities for preventive action shall be dealt with in accordance with the relevant parts of 4.5.3.2.

The results of incident investigations shall be documented and maintained.

4.5.3.2 Nonconformity, corrective action and preventive action

The organization shall establish, implement and maintain a procedure(s) for dealing with actual and potential non conformity(ies) and for taking corrective action and preventive action.

The procedure(s) shall define requirements for:

- a) identifying and correcting nonconformity(ies) and taking action(s) to mitigate their MNMs risk consequences;
- b) investigating nonconformity(ies), determining their cause(s) and taking actions in order to avoid their recurrence;
- c) evaluating the need for action(s) to prevent nonconformity(ies) and implementing appropriate actions designed to avoid their occurrence;
- d) recording and communicating the results of corrective action(s) and preventive action(s) taken; and
- e) reviewing the effectiveness of corrective action(s) and preventive action(s) taken.

Where the corrective action and preventive action identifies new or changed hazards related to MNMs risk or the need for new or changed controls, the procedure shall require that the proposed actions shall be taken through a risk assessment prior to implementation.

Any corrective action or preventive action taken to eliminate the causes of actual and potential nonconformity (ies) shall be appropriate to the magnitude of problems and commensurate with the MNMs risk(s) encountered.

The organization shall ensure that any necessary changes arising from corrective action and preventive action are made to the MNMs RMM documentation.

4.5.3.1 General

The organization must investigate events and incidents in order to prevent further incidental situations by identifying root causes, analyzing these causes, and taking actions that will lead to a solution, and will prevent further occurrence. Effectiveness of action taken must be assessed.

4.5.3.2 Guidelines for implementation

4.5.3.2.1 Event and Incident investigation

The organization shall define an event and incident investigation procedure. This procedure shall allow the organization to:

- determine the factors that contribute to the occurrence of incidents.
- identification of the need of corrective actions.
- identification of opportunities for improvement and need of changes.

In order to guarantee the proper event and incident management, the organization shall define persons responsible for:

- incident notification, conducting the investigation and cause analysis, follow up, and monitoring of corrective and preventive actions;
- accidents, incidents and non-conformities reporting;
- result of incidents investigation communication.

4.5.3.2.2 Nonconformity, corrective action and preventive action

A management of real and potential non conformities related to MNM RMM is needed. To achieve a correct treatment of nonconformities, the organization shall encourage the organization to detect and notify nonconformities related to deviations in their work performance.

To avoid the repetition of nonconformities a comprehensive analysis is needed as well as an evaluation of effectiveness in eliminating the root causes of the action taken.

Non conformity is a requirement unfulfillment/failure.

4.5.3.3 Key Questions

4.5.3.3.1 Event and Incident investigation

1. Has your organization established, implemented and maintained a procedure(s) to record, investigate and analyze incidents?
2. Does your organization document and maintain the results of the incident investigations?

4.5.3.3.2 Nonconformity, corrective action and preventive action

1. Has your organization established, implemented and maintained a procedure(s) for dealing with actual and potential non- conformities, and corrective and preventive action?

2. Does the procedure(s) define requirements for identifying and correcting non-conformities and taking action to mitigate the resulting MNMs risk consequences?
3. Are the action(s) taken to eliminate the causes of actual and potential non-conformities appropriate to the magnitude of the problem(s) and proportional to the MNMs risk(s) encountered?

4.5.4 Control of records

MNMs RMM report SPD14 text:

The organization shall establish and maintain records as necessary to demonstrate conformity to the requirements of its MNMs RMM, and the results achieved.

The organization shall establish, implement and maintain a procedure(s) for the identification, storage, protection, retrieval, retention and disposal of records.

Records shall be and remain legible, identifiable and traceable.

4.5.4.1 General

Records are the evidences for demonstrating the conformity of the MNMs RMM, so a procedure for assuring their integrity and correct conservation is required.

4.5.4.2 Guidelines for implementation

The organization shall define a procedure for assuring that the records are legible, identifiable, and recoverable, by establishing controls for their identification, storage, protection, and retrieval. The procedure may also include the period of retention and disposal of the records.

4.5.4.3 Key Questions

1. Has your organization established implemented and maintained procedures for the identification, storage, protection, retrieval, retention and disposal of MNMs RMM records?
2. How do you store the MNMs RMM records in order that they are readily retrievable and protected against damage, deterioration or loss?

4.5.5 Internal audit

MNMs RMM report SPD14 text:

The organization shall ensure that internal audits of the MNMs RMM are conducted at planned intervals to:

- a) determine whether the MNMs RMM:
 - 1. conforms to planned arrangements for occupational, health and safety matters related to MNMs risks, including the requirements of this model; and
 - 2. has been properly implemented and is maintained; and
 - 3. is effective in meeting the organization's policy and objectives;
- b) provide information on the results of audits to management.

Audit programme(s) shall be planned, established, implemented and maintained by the organization, based on the results of risk assessments of the organization's activities, and the results of previous audits.

Audit procedure(s) shall be established, implemented and maintained that address:

- a) the responsibilities, competencies, and requirements for planning and conducting audits, reporting results and retaining associated records; and
- b) the determination of audit criteria, scope, frequency and methods.

Selection of auditors and conduct of audits shall ensure objectivity and the impartiality of the audit process.

4.5.5.1 General

The internal audit is a tool that allows the organization to evaluate the implementation of the MNMs RMM.

4.5.5.2 Guidelines for implementation

The organization shall perform internal audits at planned intervals in order to review and evaluate the compliance of the MNMs RMM, as well as the effectiveness of the established procedures.

The organization should establish a plan to schedule internal audit, so that the organization should be able to guarantee the compliance, adequacy and conformity of the MNMs RMM periodically. The basis for planning the internal audits shall be the results of the MNMs risk assessments, and the results of previous audits.

Internal audits shall cover every area and activities in the scope of the MNMs RMM.

Thus, the organization should establish a procedure for planning, and performing internal audits through an audit program. This procedure shall address responsibilities and requirements for planning and executing the audits, reporting results, and what records will be generated and maintained. In addition, shall include the scope of the audit, the frequency and requirements for auditors. Accordingly, the auditors need to full these requirements and perform the audits objectively and impartially.

The auditors shall demonstrate their knowledge, competence and experience in OH&S management system and also enough training on MNMs risks and risk management. Inside SCAFFOLD Project scope the basic reference for this risk management knowledge is SPD14. For other purposes one reference with no requirements but guidelines could be ISO 31000.

For the implementation evidence of this record it can be generated the following documents and/or records:

- annual audit program, thorough all the scope, with the clear indication of the department/section/construction work or audit requirement, expected date and designed auditor(s),
- particular audit plans, indicating the specific data for audits (day, time, etc.) and the requirements to be audit,
- audit report with the conclusions for each requirement, that is the compliance or deviation with the 'obligations' in each part of the MNMs RMM (for example: a requirement can be well documented but with no evidence of its implementation).

4.5.5.3 Key Questions

1. Has your organization planned, established, implemented and maintained a programme and procedure(s) for periodic internal audits to be conducted?
2. How does the audit programme take into account the MNMs risk assessments of your organizations concerns, and the results of previous audits?
3. Does the audit procedure cover the responsibilities, competencies, and requirements for planning and conducting audits, reporting results and retention of associated records?
4. Does the audit procedure cover the determination of audit criteria, scope, frequency and methods?
5. Are auditors competent, objectives and impartial of the audit process?

4.6 Management review

MNMs RMM report SPD14 text:

4.6.1 Management model review

Top management shall review the organization's MNMs RMM, at planned intervals, to ensure its continuing suitability adequacy and effectiveness. Reviews shall include assessing opportunities for improvement and the need for changes to the MNMs RMM, including the MNMs RMM policy and objectives.

Records of the management reviews shall be retained.

4.6.1.1 Outputs for review

Input to management reviews shall include:

- a) results of internal audits and evaluations of compliance with applicable legal requirements and with other requirements to which the organization subscribes related to occupational, health and safety matters related to MNMs risks;
- b) the results of participation and consultation (see 4.4.3);
- c) relevant communication(s) from external stakeholders, including complaints;
- d) the MNMs RMM performance of the organization;
- e) the extent to which objectives have been met;
- f) status of incident investigations, corrective actions and preventive actions;
- g) follow-up actions from previous management reviews;
- h) changing circumstances, including developments in legal and other requirements related to occupational, health and safety matters related to MNMs risks; and
- i) recommendations for improvement.

4.6.1.2 Review results

The outputs from management reviews shall be consistent with the organization's commitment to continual improvement and shall include any decisions and actions related to possible changes to:

- a) MNMs RMM performance;
- b) MNMs RMM policy and objectives;
- c) resources; and
- d) other elements of the MNMs RMM.

Relevant outputs from management review shall be made available for communication and consultation.

4.6.2 Data analysis

The organization shall determine, collect and analyse appropriate data to demonstrate the suitability and effectiveness of the MNMs RMM and evaluate where continual improvement of the effectiveness of the MNMs RMM can be made. This shall include data generated as a result of monitoring and measuring and from other relevant sources.

4.6.3 Continual improvement

The organization shall continually improve the effectiveness of the MNMs RMM through the use of the MNMs risk management policy, objectives, goals and programmes, audit results, analysis of data, corrective and preventive actions and management review.

4.6.1 General

The organization must perform management review the MNMs RMM at established intervals sufficient to ensure the adequacy and continual effectiveness of the model. This periodicity must be consistent with other cycles of the model. Usually this management review is made annually.

4.6.2 Guidelines for implementation

The management review, consist on the data analysis (for example: hygienic evaluations or health vigilance) provided by the MNMs RMM, and a decision making process to act and promote the MNMs RMM and organization continual improvement, considering the need of changes in MNMs risk management Policy, the extent of achievement of objectives, results of participation and consultation, the results of the Internal Audit, changing circumstances, the continual improvement commitment, and other elements of the MNMs RMM as participation or training. This management review may also consider matters of concern of stakeholders like clients' agreements or shareholders mandates.

This management review is an opportunity for extracting conclusions and taking actions for the continual improvement. These conclusions usually are turned into particular actions like specific training or resources provided.

The management review records shall be available for the communication and consultation. Depending on the type of organization, a specific report or a management committee meeting report can be generated.

4.6.3 Key Questions

1. Has your organization's top management (at planned intervals) reviewed the MNMs RMM, to ensure its continuing suitability, adequacy and effectiveness?
2. Does the review include assessing opportunities for improvement and the need for changes to the MNMs RMM, including the MNMs RMM policy and objectives?
3. Are the records of the management reviews retained and made available for communication and consultation?
4. Has your organization continually improved the effectiveness of the MNMs RMM through the use of the MNMs risk management policy, objectives, goals and programmes, audit results, analysis of data, corrective and preventive actions and management review?

5 CONCLUSIONS

This report presented as a guide includes some guidelines for the MNMs RMM implementation. This guide is an effective instrument to implement the RMM in construction sector organizations with an OSHAS 18001 implemented management system or in case the RMM is the first attempt to systematize the MNMs risk management.

The developed methodology in this guide allows the implementation for any part of the model considering the organization necessities (processes or construction works), that is, expect the general requirements; each requirement in the model could be achieved in stages. Additionally, it allows the improvement of each requirement individually with the help of the questions included in each part of section 4.

Therefore the use of this report/guide allows the easy implementation of the different requirements of the MNMs RMM independently of the type, size and activity in the construction sector life cycle (manufacturing, construction, demolition). This is due to the fact that this guide develops the essential aspects for a correct and efficient implementation.

With this helping guide the construction company can easily integrate the preventive action of MNMs risk management in the organizational general management.

The presented diagnosis/initial review, implementation and audit questions as a check list in section 6 is a key element to help the construction companies in the implementation of the RMM.

The inclusion of these questions in the Toolkit is one of the core elements for the functionality of the software tool and its practice application to be an extremely useful mean to implement and audit the MNMs RMM and also the posterior treatment of the information for internal reports and statistics

This guide is the base for the Guide for the implementation and the audit of Scaffold's Risk Management Model for SMEs in relation with manufactured nanomaterials (MNMs) in the construction sector (SPD16), which presents for each requirement a practical 'sheets' help for SMEs in the implementation and audit for the MNMs RMM.

6 CHECK LIST QUESTIONS FOR INITIAL DIAGNOSTIC, IMPLEMENTATION AND AUDIT

This section includes 275 questions divided in:

- questions for initial diagnostic/initial review, that could be use in the training and diagnostic phase in SCAFFOLD case studies
- questions for RMM implementation to be use by the IC,
- questions for RMM audit to be answer in the audit process of RMM that will be part of the demonstrations in SCAFFOLD case studies.

The inclusion of these questions in the Toolkit is one of the core elements for the functionality of the software tool and its practice application to be an extremely useful mean to implement and audit the MNMs RMM and also the posterior treatment of the information for internal reports and statistics.

6.1 Questions for initial diagnostic/review

4.1 Requirements for the Occupational Health and Safety MNMs Risk Management Model
What is the scope of the MNMs RMM?
Has your organization identified the external and internal context?
Has your organisation identified the internal and external stakeholders affected to MNMs RMM?
4.2 MNMs risk management policy and management commitment
4.2.1 Management commitment
Has your organization defined the roles, responsibilities and authority?
4.2.2 MNMs risk management policy
Has your organization defined a MNMs RMM policy?
Has top management defined and authorised your organisation's MNMs RMM policy?
Is the MNMs RMM policy documented, implemented and maintained?
4.3 PLANNING
4.3.1 MNMs risk assessment
Has your organisation established, implemented and maintained a procedure for the ongoing identification of risks, assessment of their risk and determining the necessary controls?
4.3.1.1 MNMs risk identification
Has your organization defined a MNMS risk identification procedure?
4.3.1.3 MNMs risk evaluation
Has your organisation established, implemented and maintained a procedure for MNMs risk evaluation?
Has your organization defined criteria to be used to evaluate the significance of risk?
Has your organization documented and communicated the MNMs Risk criteria?
4.3.2 MNMs risk treatment
Has your organisation established, implemented and maintained a procedure for selecting one or more options for modifying risks, and implementing those options?
4.3.3 Legal and other requirements
Has your organization established, implemented and maintained a procedure for identifying and accessing the legal and other requirements applicable MNMs RMM?
4.3.4 Objectives and programme(s)
4.3.4.1 Objectives, goals and programmes of MNMs RMM for
Has the organization established implemented and maintained documented objectives, goals and programmes of MNMs RMM at relevant functions and levels within the organization?
4.3.4.2 MNMs risk management planning
4.4 IMPLEMENTATION AND OPERATION
4.4.1 Resources, roles, responsibility, accountability and authority. General.
How does your organization demonstrate that the ultimate responsibility for Occupational, Health and Safety and the MNMs RMM lies with the Top Management?
Has your organization determinate , provided and maintained the infrastructure needed to achieve conformity to MNMs RMM requirements?
Are the roles, responsibility, accountabilities and authorities defined, documented and communicated?

4.4.2 Competence, training and awareness
Has your organization defined the job profiles related with MNMs RMM?
Are all persons working for them, or their control with MNMs (e.g. staff, contractors, shift workers, casual staff, labour hire etc), competent to undertake the tasks that can impact on Occupational, Health and Safety? Note: Assessment of competence can be on the basis of appropriate education, training and/or experience?
Has a procedure(s) been established, implemented and maintained to ensure that the people working for, or under the control of your organization are aware with the MNMS RMM requirements?
4.4.3 Communication, participation and consultation
4.4.3.1 Communication
Has your organization established, implemented and maintained procedure(s) for internal and external communication?
4.4.3.2 Participation and consultation
Are the workers informed about the arrangement of their participation and who is their representative(s) on Occupational, Health and Safety matters related to MNMs risks?
Has your organization established, implemented and maintained procedure(s) for participation and consultation?
4.4.4 Documentation
Does your organization's MNMs RMM documentation include:
<ul style="list-style-type: none"> a) the MNMs risk management policy and objectives; b) description of the scope of the MNMs RMM; c) description of the main elements of the MNMs RMM and their interaction, and reference to related documents; d) documents, including records, required by the model; and e) documents, including records, determined by the organization to be necessary to ensure the effective planning, operation and control of processes that relate to the management of its MNMs risks.
Has your organization established and maintained a MNMs risk manual?
4.4.5 Control of documents
Has your organization established, implemented and maintained a procedure(s) for controlling all documents required by this MNMs RMM?
4.4.6 MNMs Operational control
Has your organization determined the operations and activities that are associated with the identified risk(s) and implementation of controls are necessary to manage the MNMs risk(s)?
4.4.7 MNMs emergencies preparedness and response
Has your organization established, implemented and maintained a procedure(s) to identify the potential emergency situations related to MNMs risks? and to response to such emergency situations?
Has your organization established a procedure (s) that ensures the continuity of the activities of the organization to events that are likely to interrupt them?
4.5 CHECKING
4.5.1 Monitoring and measurements of MNMs risk management activities
Has your organization established, implemented and maintained a procedure(s) to monitor and measure MNMs RMM performance?

4.5.2 Legal compliance evaluation

Has your organization established, implemented and maintained a procedure(s) for periodically evaluating its compliance with the applicable legal and other requirements identified in clause 4.3.2 of this standard?

4.5.3 Incident investigation, nonconformity, corrective action and preventive action

4.5.3.1 Event and Incident investigation

Has your organization established, implemented and maintained a procedure(s) to record, investigate and analyze incidents?

4.5.3.2 Nonconformity, corrective action and preventive action

Has your organization established, implemented and maintained a procedure(s) for dealing with actual and potential non- conformities, and corrective and preventive action?

4.5.4 Control of records

Has your organization established, implemented and maintained procedures for the identification, storage, protection, retrieval, retention and disposal of MNMs RMM records?

4.5.5 Internal Audit

Has your organization planned, established, implemented and maintained a programme and procedure(s) for periodic internal audits to be conducted?

4.6 MANAGEMENT REVIEW

Has your organization's top management (at planned intervals) reviewed the MNMs RMM, to ensure its continuing suitability, adequacy and effectiveness?

4.6.2 Data analysis

Has your organization determinate, collected and analyzed appropriate data to demonstrate the suitable and effectiveness of the MNMs RMM and evaluated where continual improvement of the effectiveness of the MNMs RMM can be made?

4.6.3 Continual improvement

Has your organization continually improved the effectiveness of the MNMs RMM through the use of the MNMs risk management policy, objectives, goals and programmes, audit results, analysis of data, corrective and preventive actions and management review?

6.2 Questions for RRM implementation in SMEs

4.1 Requirements for the Occupational Health and Safety MNMs Risk Management Model
What is the scope of the MNMs RMM?
Is the scope of the MNMs RMM defined and formally documented within your organization?
Are there activities that are excluded from the scope of the MNMs RMM and are the reasons for exclusion acceptable?
Has your organisation established the external and internal context in which the organization seeks to achieve its objectives related to Occupational Health and Safety and affecting to capacity to carry out the expected results of MNMs RMM?
Has your organisation identified the internal and external stakeholders affected to MNMs RMM and establish the requirements related to Occupational Health and Safety matters for them?
Does it include those occupational, health and safety matters related to MNMs risks and hazards which you can control or over which you could be expected to have an influence upon?
Has your organization established, documented, implemented, reviewed and continuously improved the MNMs RMM effectively in accordance with the requirements of this specification?
Has your organization determined how you will comply with these requirements?
4.2 MNMs risk management policy and management commitment
4.2.1 Management commitment
Has the top management ensured the roles, responsibilities and authority into the organization, as well as accountability for managing Occupational, Health and Safety matters related to MNMs risk?
Has your organization identified risk owners and people who have accountability of performance, implementation and maintenance of MNMs RMM at all levels of the organization and ensure that they have the appropriate skills to manage MNMs risks?
4.2.2 MNMs risk management policy
Has top management defined and authorised your organisation's MNMs RMM policy?
Is the policy consistent with the scope of the MNMs RMM?
Is the policy appropriate to the nature, scale and MNMs risks in your activities, products or services?
What commitment does your policy make to continual improvement?
What commitment does your policy make to the prevention of injury and ill health in the workplace?
Does the MNMs Risk Management policy include a commitment to comply with applicable legislation and regulations, and with other requirements to which you subscribe that relate to your Occupational, Health and Safety hazards (e.g. Industry sector guidelines)?
Does the policy provide the framework for setting and reviewing MNMs RMM objectives?
Is the MNMs RMM policy documented, implemented and maintained?
How is the policy communicated to all persons working under the control of the organization and the interested parties?
How the policy is made available to the interested parties?

4.3 PLANNING
4.3.1 MNMs risk assessment
4.3.1.1 MNMs risk identification
How the procedures for MNMS risk identification have taken into account the identification sources of risk, areas of impacts, events (including changes in circumstances) and their causes and their potential consequences the routine and non- routine activities of the organisation?
How the procedures for MNMS risk identification have taken into account the activities of all persons having access to the workplace (including contractors and visitors)?
How the procedures for MNMS risk identification have taken into account the human behaviour, capabilities and other human factors?
How the procedures for MNMS risk identification have taken into account the identified risks originating outside the workplace capable of adversely affecting the health and safety of persons under the control of the organization within the workplace?
How the procedures for MNMS risk identification have taken into account the risks created in the vicinity of the workplace by work-related activities under the control of the organization? NOTE. It may be more appropriate for such hazards to be assessed as an environmental aspect.
How the procedures for MNMS risk identification have taken into account the infrastructure, equipment and materials at the workplace, whether provided by the organization or others?
How the procedures for MNMS risk identification have taken account the changes or proposed changes in the organization, its activities, or materials?
How do the procedures for MNMS risk identification have taken into account the operations, process and activities (routine and non-routine activities) and their workplaces?
How the procedures for MNMS risk identification have taken into account the Legal and other requirements to which the organization subscribes that are applicable to it?
How the procedures for MNMS risk identification have taken into account the modifications to the MNMs risk management model, including temporary changes, and their impacts on operations, processes, and activities?
How the procedures for MNMS risk identification have taken into account the any applicable legal obligations relating to risk assessment and implementation of necessary controls)?
How the procedures for MNMS risk identification have taken into account the design of work areas, processes, installations, machinery/equipment, operating procedures and work organization, including their adaptation to human capabilities?
How the procedures for MNMS risk identification have taken into account the identification sources of risk, areas of impacts, events (including changes in circumstances) and their causes and their potential consequences the routine and non- routine activities of the organisation?
Has the MNMs risk identification included those events that would create, enhance, prevent, degrade, accelerate or delay the achievement of objectives?
Has the MNMs risk identification included sources of MNMs risk, whether or not under the control of the organization?
Has the MNMs risk identification included areas of risk impacts on operations, processes and activities of the organization?
Has the MNMs risk identification included the causes and potential consequences of the risks, include examination of the knock-on effects of particular consequences, including cascade and cumulative effects?
How the methodology provide for the identification, prioritisation and documentation of the MNMs risks and the application of the controls to be used?

Has your organization included relevant and up-to-date information to identify MNMs risk? and background information where possible?

Has your organization included people with appropriate knowledge to identify MNMs risk?

4.3.1.3 MNMs risk evaluation

Has your organization established, implemented and maintained a procedure for MNMs risk evaluation, so that the nature and level of risk is understood to prioritize the risks to be addressed and to facilitate decision making in the organization?

Has your organization defined criteria to be used to evaluate the significance of risk?

Does the criteria reflect the organization's values, MNMs risk policy, objectives and resource, and some criteria can be imposed by, or derived from, legal and regulatory requirements and other requirements to which the organization subscribes?

When defining risk criteria, how your organization has considered the establishment of the internal and external context?

When defining risk criteria, how your organization has considered the nature and types of causes and consequences that can occur and how they will be measured?

When defining risk criteria, how your organization has considered how likelihood will be defined?

When defining risk criteria, how your organization has considered the timeframe(s) of the likelihood and/or consequence(s)?

When defining risk criteria, how your organization has considered how the level of risk is to be determined?

When defining risk criteria, how your organization has considered the views of stakeholders?

When defining risk criteria, how your organization has considered the level at which risk becomes acceptable or tolerable?

When defining risk criteria, how your organization has considered whether combinations of multiple risks should be taken into account and, if so, how and which combinations should be considered?

Has your organization documented and communicated the MNMs Risk criteria?

How does your organization document and communicate the MNMs Risk criteria?

Has your organization determining the consequences and their likelihood, and other attributes of the risk?

Does the level of risk reflect the type of risk, the information available and the purpose for which the risk assessment output is to be used? And is it consistent with the MNMs risk criteria?

Are the interdependence of different risks and their sources considered?

4.3.2 MNMs risk treatment

Are the risk treatment options including the following:

- a) avoiding the MNMs risk by deciding not to start or continue with the activity that gives rise to the MNMs risk;
- b) taking or increasing the MNMs risk in order to pursue an opportunity;
- c) removing the MNMs risk source;
- d) changing the likelihood;
- e) changing the consequences;
- f) sharing the MNMs risk with another party or parties (including contracts and risk financing); and
- g) retaining the MNMs risk by informed decision.

Has your organization selecting the most appropriate risk treatment options involves balancing the costs and efforts of implementation against the benefits derived, with regard to legal, regulatory, and other requirements?

Has your organization risk treatment plans to document how the chosen treatment options will be implemented: the reasons for selection of treatment options, responsible, proposed actions, resources requirements, performances measures and timing and schedule?

Has your organization planned periodically the risk treatment plans evaluation?

Has your organization planned the monitoring and review?

Has your organization documented and kept the results of MNMs risks identification, evaluation and treatment assessments and determined controls up-to-date?

4.3.3 Legal and other requirements

Has your organization established, implemented and maintained a procedure for identifying and accessing the legal and other requirements applicable MNMs RMM?

Do you ensure that these legal and other requirements which the organization subscribes are taken into account in the implementation and maintenance of MNMs RMM?

How this information is kept up-to-date?

Has the organization communicated relevant information about legal requirements and other requirements to persons working under the control and other stakeholders?

4.3.4 Objectives and programme(s)

4.3.4.1 Objectives, goals and programmes of MNMs RMM for

Are the objectives and goals measurable?

And are the objectives consistent with the policy, including health and safety committees, and the legal and other requirements which the organization subscribes, and to continual improvement?

When establishing and reviewing objectives, does the organization take into account legal and other requirements which the organization subscribes and MNMs risks?

When establishing and reviewing objectives, does the organization take into account technological options and funding, and operational and business requirements, and the points of view of relevant stakeholders?

Has the organization established, implemented and maintained a programme(s) to achieve the objectives MNMs?

Are defined responsibilities and deadlines for achieving the objectives?

Does the program is periodically reviewed at planned intervals and adjusted if necessary to achieve the objectives?

4.3.4.2 MNMs risk management planning

Does the Top Management ensure that the planning of the MNMs RMM is carried out in order to meet the requirements given in 4.1 as well as the objectives, goals and programmes?

Does the Top Management ensure that the integrity of the MNMs RMM is maintained when the changes to the MNMs RMM are planned and implemented?

4.4 IMPLEMENTATION AND OPERATION

4.4.1 Resources, roles, responsibility, accountability and authority. General.

Does the Top Management demonstrate its commitment ensuring that resources essential to establishing, maintaining and improving the MNMs RMM are available?

Do these resources include: human resources? specialised skills? Organizational infrastructure? technology? financial resources?

Do these infrastructure include buildings, workspace and associated utilities? process equipment (both hardware and software)? and supporting services (such as transport, communication or information systems)?

How are the roles, responsibility, accountabilities and authorities defined, documented and communicated in order to achieve effective MNMs RMM?
How is the identity of the Top Management appointee made (management representative) available to all persons working under the control of your organization?
How do all those with management responsibility demonstrate their commitment to continual improvement of the MNMs RMM?
How does your organization ensure that persons in the workplace take responsibility for the aspects of Occupational, Health and Safety over which they have control, including adhering to the organization's applicable MNMs RMM requirements?
4.4.2 Competence, training and awareness
How does your organization ensure that all persons working for them, or under their control (e.g. staff, contractors, shift workers, casual staff, labour hire etc) with MNMs, are competent to undertake the tasks that can impact on Occupational, Health and Safety? Note: Assessment of competence can be on the basis of appropriate education, training and/or experience?
Has your organization retained competency associated records?
How does your organization identify training needs associated with its MNMs risks and its MNMs RMM?
Has training, or other actions required to meet these needs been delivered, the effectiveness of the training evaluated and associated records retained?
Has a procedure(s) been established, implemented and maintained to ensure that the people working for, or under the control of your organization are aware of <ul style="list-style-type: none"> a) the Occupational, Health and Safety consequences, actual or potential, of their work activities, their behaviour and the Occupational, Health and Safety benefits of improved personal performance? b) their roles and responsibilities and importance of conforming to the MNMs Risk Management policy, procedures and to the requirements of their MNMs RMM including emergency preparedness and response requirements? c) do they understand the potential consequences if they deviate from the specified procedures?
Do the training procedures take into account different levels of <ul style="list-style-type: none"> a) responsibility, ability, language skills and literacy; and b) risk
4.4.3 Communication, participation and consultation
4.4.3.1 Communication
Has your organization established, implemented and maintained procedure(s) for internal communication between the various levels and functions of your organization?
Has your organization established, implemented and maintained procedure(s) for communication with contractors and other visitors to the workplace?
Has your organization established, implemented and maintained procedure(s) for receiving, documenting and responding to relevant communication from external interested parties?
Where appropriate, have you included the consolidation processes of MNMs risk information from a variety of sources and considering the sensitive of the information?
4.4.3.2 Participation and consultation
Are the workers informed about the arrangement of their participation and who is their representative(s) on Occupational, Health and Safety matters related to MNMs risks?

Has your organization established, implemented and maintained procedure(s) for the participation of workers by their:

- appropriate involvement in hazard identification, risk assessments and determination of controls;
- appropriate involvement in incident investigation;
- involvement in the development and review of MNMs RMM policies and objectives;
- consultation where there are any changes that affect their Occupational, Health and Safety related to MNMs risks;
- representation on Occupational, Health and Safety related to MNMs matters.

Has your organization established, implemented and maintained procedure(s) for the consultation with contractors where there are changes that affect their Occupational, Health and Safety related to MNMs risks?

How does your organization ensure that, when appropriate, the relevant external interested parties are consulted about pertinent Occupational, Health and Safety matters related with MNMs risks?

4.4.4 Documentation

Does your organization's MNMs RMM documentation include:

- a) the MNMs risk management policy and objectives;
- b) description of the scope of the MNMs RMM;
- c) description of the main elements of the MNMs RMM and their interaction, and reference to related documents;
- d) documents, including records, required by the model; and
- e) documents, including records, determined by the organization to be necessary to ensure the effective planning, operation and control of processes that relate to the management of its MNMs risks.

Documents, including records, necessary for the effective planning, operation and control of processes related to its MNMs risks?

How is the documentation maintained?

Is that documentation proportional to the level of complexity and risks concerned and is kept to the minimum required for effectiveness and efficiency?

Has your organization established and maintained a MNMs risk manual?

Does the MNMS risk manual included

- a) the scope of the MNMs RMM,
- b) the description of the main elements of the MNMs RMM and their interaction, and reference to related documents;
- c) the main types of MNMs risks and MNMs risk criteria;
- d) the documented procedures established for the MNMs RMM, or reference to them.

4.4.5 Control of documents

Has your organization established, implemented and maintained a procedure(s) for controlling all documents required by this MNMs RMM?

Are the documents approved for adequacy before they are issued?

Who approves the documents for adequacy before they are issued?

How does the organization ensure that changes and the current revision status of documents are identified?

How does the organization ensure that relevant versions of applicable documents are available at points of use?

Are documents legible, readily identifiable and available at points of use?

Are the external documents controlled their distribution?

Does it prevent the unintended use of obsolete documents and apply suitable identification to them if they are retained for any purpose?

4.4.6 MNMs Operational control

How has your organization determined the operations and activities that are associated with the identified risk(s) and implementation of controls are necessary to manage the MNMs risk(s).

Has the management of change been included (see 4.3.1)?

Has your organization implemented and maintained documented procedures, to cover situations where their absence could lead to deviations from the MNMs RMM policy and objectives?

Has your organization implemented and maintained operational criteria in the procedures?

Has your organization implemented and maintained operational control, as applicable, to your organization and its activities?

Has your organization implemented and maintained controls related to contractors and other visitors to the workplace?

Has your organization implemented and maintained controls related to purchased goods, equipment and services used by the organization and communication applicable procedures and requirements for stakeholders?

Has your organization implemented and maintained controls related to the stakeholders of the organization?

4.4.7 MNMs emergencies preparedness and response

Has your organization established, implemented and maintained a procedure(s) to identify the potential emergency situations related to MNMs risks? and to response to such emergency situations?

Does the procedure(s) cover how your organization will respond to actual emergency situations related to MNMs risks?

Does the procedure(s) cover how your organization will prevent or mitigate the associated adverse occupational, health and safety matters related to MNMs risks consequences?

How does your organization plan its emergency response and does it take into account the needs of relevant interested parties? Note: this can include emergency services, neighbours, visitors, media crews, delivery vehicles, electricity, gas and water suppliers, etc.

How does your organization test these procedure(s) to be able to respond to these emergency situations and, where practicable, do you involve relevant interested parties?

Has your organization test these procedure(s) to be able to respond to these emergency situations?

Is this testing carried out periodically?

Does your organization periodically review, revise and update its emergency preparedness and response procedure(s) after the completion of the scheduled test and after the occurrence of an emergency situation, where necessary? (see 4.5.3)

Has your organization taken into account especially those activities related to MNMs risk that support the products and / or services of the organization?

Do these procedures ensure the resilience of the organization with minimum conditions for continuing to operate in the most effective manner?

Do the recovery procedure(s) in activity to an interruption determine:

Does recovery procedure(s) determine the minimum conditions necessary for the continuation of the activities of the organization?

Does recovery procedure(s) determine the period within which the activity must be recovered to the conditions set after an interruption;

Does recovery procedure(s) determine the steps and actions to take when the interrupt occurs ,

Does recovery procedure(s) determine protocols appropriate internal and external communication ;
Does recovery procedure(s) determine the persons responsible for managing the recovery of such activities ;
Does recovery procedure(s) determine the resources needed to deal with the recovery of activity.
Has your organization periodically reviewed and modified, where necessary, procedures for recovery of activity to an interruption of the activity of the organization, taking into account the needs of relevant stakeholders as appropriate?
4.5 CHECKING
4.5.1 Monitoring and measurements of MNMs risk management activities
Has your organization established, implemented and maintained a procedure(s) to monitor and measure MNMs RMM performance?
Does the procedure(s) provide for performance measures that track conformity with the programs, controls and operational criteria as well as the qualitative and quantitative measures appropriate to the needs of the organization?
Does the procedure(s) provide for monitoring of the extent to which the organization's MNMs RMM objectives are met?
Does the procedure(s) provide for monitor the effectiveness of the controls (for health as well as for safety related to MNMs risks)?
Does the procedure(s) provide for proactive measures of performance that monitor conformance with the MNMs RMM programme(s), controls and operational criteria?
Does the procedure(s) provide for reactive measures of performance that monitor ill health, incidents (including incidents, accidents, near-misses, etc.), and other historical evidence of deficient MNMs RMM performance?
Does the procedure(s) provide for detecting changes that may occur in the context of the organization, including changes to MNMs risk criteria and the risk itself which can require revision of corrective and preventive actions?
Does the procedure(s) provide for recording of data and results of monitoring and measurement sufficient to facilitate subsequent corrective action and preventive action analysis?
Does the procedure(s) provide for identifying emerging MNMs risks?
How monitoring and measuring equipment is calibrated or verified and maintained (procedure)? Are calibration or verification records retained?
Does the organization define clearly the responsibilities of performance measurement and monitoring?
4.5.2 Legal compliance evaluation
Has your organization established, implemented and maintained a procedure(s) for periodically evaluating its compliance with the applicable legal and other requirements identified in clause 4.3.2 of this standard?
Has your organization evaluated its compliance with other requirements identified in clause 4.3.2 of this standard?
Are the records of the results of these periodic evaluations maintained?
4.5.3 Incident investigation, nonconformity, corrective action and preventive action
4.5.3.1 Event and Incident investigation
Has your organization established, implemented and maintained a procedure(s) to record, investigate and analyze incidents?
Is the incident investigation in order to determine any underlying MNMs RMM deficiencies and other factors that might be causing or contributing to the occurrence of incidents?

Is the incident investigation in order to improve the MNMs risk identification, assessment and treatment process?
Is the incident investigation in order to identify the need for corrective action?
Is the incident investigation in order to identify opportunities for preventative action and continual improvement?
Is the incident investigation in order to communicate the results of the investigation?
Does your organization undertake these investigations in a timely manner? (Note: You may also want to define what your organization considers timely).
Does your organization use the Non-conformity, Corrective & Preventive Action system to deal with any actions? (see 4.5.3.2)
Does your organization document and maintain the results of the incident investigations?
4.5.3.2 Nonconformity, corrective action and preventive action
Has your organization established, implemented and maintained a procedure(s) for dealing with actual and potential non- conformities, and corrective and preventive action?
Does the procedure(s) define requirements for identifying and correcting non-conformities and taking action to mitigate the resulting MNMs risk consequences?
Does the procedure(s) define requirements for investigating the non-conformities, determining their causes and take action to avoid their recurrence?
Does the procedure(s) define requirements for evaluating the need for actions to be taken to prevent non-conformities, and implementing appropriate actions?
Does the procedure(s) define requirements for recording the results of corrective and preventive actions taken?
Does the procedure(s) define requirements for reviewing the effectiveness of corrective and preventive actions?
When your organization's corrective and preventative action system identifies new or changed hazards related to MNMs risk and controls, does your procedure require your organization to undertake a risk assessment prior to implementation (of the actions)?
How do you decide that the action(s) taken to eliminate the causes of actual and potential non-conformities are appropriate to the magnitude of the problem(s) and proportional to the MNMs risk(s) encountered?
How do you ensure that changes (if any) are made in the MNMs RMM documentation?
4.5.4 Control of records
How are these updated?
Do these records include those that are necessary to demonstrate conformity to the requirements of the standard?
Are it included records of Hazard identification, risk assessment and determining controls?
Are it included records of competence, training & awareness?
Are it included records of communication?
Are it included records of evaluation of compliance with legal and other requirements?
Are it included records of monitoring and measurement?
Are it included records of corrective & preventive action?
Are it included records of Internal audits?
Are it included records of Management review?
Are the records legible, identifiable and traceable?

How do you store the MNMs RMM records in order that they are readily retrievable and protected against damage, deterioration or loss?

Do you have a backup procedure for electronic records?

4.5.5 Internal Audit

Has your organization planned, established, implemented and maintained a programme and procedure(s) for periodic internal audits to be conducted?

Do these internal audits determine whether or not the MNMs RMM conforms to planned arrangements for occupational, health and safety matters related to MNMs risks, including the requirements of this model?

Do these internal audits determine whether or not the MNMs RMM has been properly implemented and maintained?

Do these internal audits determine whether or not the MNMs RMM is effective in meeting your organization's policy and objectives?

Do these internal audits provide information on the results of audits to management?

How does the audit programme take into account the MNMs risk assessments of your organizations concerns, and the results of previous audits?

How does your organization provide information on the results of audits to management?

Does the audit procedure cover the responsibilities, competencies, and requirements for planning and conducting audits, reporting results and retention of associated records?

Does the audit procedure cover the determination of audit criteria, scope, frequency and methods?

How the competency of the MNMs auditors used is determined?

How do the selection of auditors and the conduct of audits ensure objectivity and impartiality of the audit process?

4.6 MANAGEMENT REVIEW

Has your organization's top management (at planned intervals) reviewed the MNMs RMM, to ensure its continuing suitability, adequacy and effectiveness?

Does the review include assessing opportunities for improvement and the need for changes to the MNMs RMM, including the MNMs RMM policy and objectives?

Do the inputs to management review include:

Do the inputs to management review include results from internal audits and evaluations of compliance with legal and other requirements related to occupational, health and safety matters related to MNMs risks?

Do the inputs to management review include the results of participation and consultation?

Do the inputs to management review include relevant communication from external parties, including complaints?

Do the inputs to management review include the MNMs RMM performance of your organization?

Do the inputs to management review include the extent to which the objectives have been met?

Do the inputs to management review include the status of incident investigations, corrective and preventive actions

Do the inputs to management review include follow-up actions from previous management reviews

Do the inputs to management review include changing circumstances, including developments in legal and other requirements related to occupational, health and safety matters related to MNMs risks, and

Do the inputs to management review include recommendations for improvement?

Do the outputs from the management review include decisions and actions related to possible changes to the MNMs RMM policy, objectives, resources, MNMs RMM performance and other elements of the MNMs RMM, and consistent with the commitment to continual improvement?

Are the records of the management reviews retained and made available for communication and consultation?

4.6.2 Data analysis

Has your organization determine, collected and analyzed appropriate data to demonstrate the suitability and effectiveness of the MNMs RMM and evaluated where continual improvement of the effectiveness of the MNMs RMM can be made?

Has the data generated as a result of monitoring and measurement and from other relevant sources been included?

4.6.3 Continual improvement

Has your organization continually improved the effectiveness of the MNMs RMM through the use of the MNMs risk management policy, objectives, goals and programmes, audit results, analysis of data, corrective and preventive actions and management review?

6.3 Questions for RMM audit in SMEs

4.1 Requirements for the Occupational Health and Safety MNMs Risk Management Model
What scope is being assessed for certification?
Is the scope of the MNMs RMM defined and formally documented within your organization?
Are there activities that are excluded from the scope of the MNMs RMM and are the reasons for exclusion acceptable?
Has your organisation established the external and internal context in which the organization seeks to achieve its objectives related to Occupational Health and Safety and affecting to capacity to carry out the expected results of MNMs RMM?
Has your organisation identified the internal and external stakeholders affected to MNMs RMM and establish the requirements related to Occupational Health and Safety matters for them?
Does it include those occupational, health and safety matters related to MNMs risks and hazards which you can control or over which you could be expected to have an influence upon?
Has your organization established, documented, implemented, reviewed and continuously improved the MNMs RMM effectively in accordance with the requirements of this specification?
Has your organization determined how you will comply with these requirements?
4.2 MNMs risk management policy and management commitment
4.2.1 Management commitment
Has the top management ensured the roles, responsibilities and authority into the organization, as well as accountability for managing Occupational, Health and Safety matters related to MNMs risk?
Has your organization identified risk owners and people who have accountability of performance, implementation and maintenance of MNMs RMM at all levels of the organization and ensure that they have the appropriate skills to manage MNMs risks?
Has your organization reviewed the conformity of roles, responsibilities and authority into the organization, as well as accountability for managing Occupational, Health and Safety matters related to MNMs risk?
4.2.2 MNMs risk management policy
Has top management defined and authorised your organisation's MNMs RMM policy?
Is the policy consistent with the scope of the MNMs RMM?
Is the policy appropriate to the nature, scale and MNMs risks in your activities, products or services?
What commitment does your policy make to continual improvement?
What commitment does your policy make to the prevention of injury and ill health in the workplace?
Does the MNMs Risk Management policy include a commitment to comply with applicable legislation and regulations, and with other requirements to which you subscribe that relate to your Occupational, Health and Safety hazards (e.g. Industry sector guidelines)?
Does the policy provide the framework for setting and reviewing MNMs RMM objectives?
Is the MNMs RMM policy documented, implemented and maintained?
How is the policy communicated to all persons working under the control of the organization and the interested parties?
How the policy is made available to the interested parties?
Is the policy reviewed at regular intervals and what triggers will result in the review to be undertaken by the organisation?

4.3 PLANNING
4.3.1 MNMs risk assessment
4.3.1.1 MNMs risk identification
Does the procedures for MNMS risk identification take into account the activities of all persons having access to the workplace (including contractors and visitors)?
Does the procedures for MNMS risk identification take into account the human behaviour, capabilities and other human factors?
Does the procedures for MNMS risk identification take into account the identified risks originating outside the workplace capable of adversely affecting the health and safety of persons under the control of the organization within the workplace?
Does the procedures for MNMS risk identification take into account the risks created in the vicinity of the workplace by work-related activities under the control of the organization? NOTE. It may be more appropriate for such hazards to be assessed as an environmental aspect.
Does the procedures for MNMS risk identification take into account the infrastructure, equipment and materials at the workplace, whether provided by the organization or others?
Does the procedures for MNMS risk identification take account the changes or proposed changes in the organization, its activities, or materials?
Does the procedures for MNMS risk identification take into account the operations, process and activities (routine and non-routine activities) and their workplaces?
Does the procedures for MNMS risk identification take into account the Legal and other requirements to which the organization subscribes that are applicable to it?
Does the procedures for MNMS risk identification take into account the modifications to the MNMs risk management model, including temporary changes, and their impacts on operations, processes, and activities?
Does the procedures for MNMS risk identification take into account the any applicable legal obligations relating to risk assessment and implementation of necessary controls)?
Does the procedures for MNMS risk identification take into account the design of work areas, processes, installations, machinery/equipment, operating procedures and work organization, including their adaptation to human capabilities?
Has the MNMs risk identification included those events that would create, enhance, prevent, degrade, accelerate or delay the achievement of objectives?
Has the MNMs risk identification included sources of MNMs risk, whether or not under the control of the organization?
Has the MNMs risk identification included areas of risk impacts on operations, processes and activities of the organization?
Has the MNMs risk identification included the causes and potential consequences of the risks, include examination of the knock-on effects of particular consequences, including cascade and cumulative effects?
How is your organisation's methodology for MNMs risk identification defined with respect to its scope, nature and timing to ensure it is proactive rather than reactive?
Does the methodology provide for the identification, prioritisation and documentation of the risks and the application of the controls to be used?
Has your organisation applied risk identification tools and techniques that are suited to its objectives and capabilities, and to the risks faced?
Has your organization included relevant and up-to-date information to identify MNMs risk? and background information where possible?

Has your organization included people with appropriate knowledge to identify MNMs risk?
4.3.1.3 MNMs risk evaluation
Has your organization established, implemented and maintained a procedure for MNMs risk evaluation, so that the nature and level of risk is understood to prioritize the risks to be addressed and to facilitate decision making in the organization?
Has your organization defined criteria to be used to evaluate the significance of risk?
Does the criteria reflect the organization's values, MNMs risk policy, objectives and resource, and some criteria can be imposed by, or derived from, legal and regulatory requirements and other requirements to which the organization subscribes?
When defining risk criteria, has your organization considered the establishment of the internal and external context?
When defining risk criteria, has your organization considered the nature and types of causes and consequences that can occur and how they will be measured?
When defining risk criteria, has your organization considered how likelihood will be defined?
When defining risk criteria, has your organization considered the timeframe(s) of the likelihood and/or consequence(s)?
When defining risk criteria, has your organization considered how the level of risk is to be determined?
When defining risk criteria, has your organization considered the views of stakeholders?
When defining risk criteria, has your organization considered the level at which risk becomes acceptable or tolerable?
When defining risk criteria, has your organization considered whether combinations of multiple risks should be taken into account and, if so, how and which combinations should be considered?
How does your organization document and communicate the MNMs Risk criteria?
Has your organization determining the consequences and their likelihood, and other attributes of the risk?
Does the level of risk reflect the type of risk, the information available and the purpose for which the risk assessment output is to be used? And is it consistent with the MNMs risk criteria?
Are the interdependence of different risks and their sources considered?
4.3.2 MNMs risk treatment
Are the risk treatment options including the following: a) avoiding the MNMs risk by deciding not to start or continue with the activity that gives rise to the MNMs risk; b) taking or increasing the MNMs risk in order to pursue an opportunity; c) removing the MNMs risk source; d) changing the likelihood; e) changing the consequences; f) sharing the MNMs risk with another party or parties (including contracts and risk financing); and g) retaining the MNMs risk by informed decision.
Has your organization selecting the most appropriate risk treatment options involves balancing the costs and efforts of implementation against the benefits derived, with regard to legal, regulatory, and other requirements?
Has your organization risk treatment plans to document how the chosen treatment options will be implemented: the reasons for selection of treatment options, responsible, proposed actions, resources requirements, performances measures and timing and schedule?
Has your organization planned periodically the risk treatment plans evaluation?
Has your organization planned the monitoring and review?

Has your organization verified the conformity of the MNMs risk treatment plans?
Has your organization documented and kept the results of MNMs risks identification, evaluation and treatment assessments and determined controls up-to-date?
4.3.3 Legal and other requirements
Do you ensure that these legal and other requirements which the organization subscribes are taken into account in the implementation and maintenance of MNMs RMM?
Do you ensure that the legal and other requirements which the organization subscribes are kept up-to-date?
Has the organization communicated relevant information about legal requirements and other requirements to persons working under the control and other stakeholders?
4.3.4 Objectives and programme(s)
4.3.4.1 Objectives, goals and programmes of MNMs RMM for
Are the objectives and goals measurable?
And are the objectives consistent with the policy, including health and safety committees, and the legal and other requirements which the organization subscribes, and to continual improvement?
When establishing and reviewing objectives, does the organization take into account legal and other requirements which the organization subscribes and MNMs risks?
When establishing and reviewing objectives, does the organization take into account technological options and funding, and operational and business requirements, and the points of view of relevant stakeholders?
Has the organization established, implemented and maintained a programme(s) to achieve the objectives MNMs?
Are defined responsibilities and deadlines for achieving the objectives?
Does the program is periodically reviewed at planned intervals and adjusted if necessary to achieve the objectives?
Has your organization verified the conformity of the programme(s) to achieve the objectives MNMs?
4.3.4.2 MNMs risk management planning
Does the Top Management ensure that the planning of the MNMs RMM is carried out in order to meet the requirements given in 4.1 as well as the objectives, goals and programmes?
Does the Top Management ensure that the integrity of the MNMs RMM is maintained when the changes to the MNMs RMM are planned and implemented?
4.4 IMPLEMENTATION AND OPERATION
4.4.1 Resources, roles, responsibility, accountability and authority. General.
Does the Top Management demonstrate its commitment ensuring that resources essential to establishing, maintaining and improving the MNMs RMM are available?
Are the infrastructure needed to achieve conformity to MNMs RMM requirements adequate?
Has your organization appointed a member(s) from Top Management with specific responsibilities and defined roles and authority for ensuring that the MNMs RMM is established, implemented and maintained in accordance with the model?
Has your organization appointed a member(s) from Top Management with specific responsibilities and defined roles and authority for ensuring that reporting on the performance of MNMs RMM is presented to Top Management for review and used as the basis to identify improvements to the MNMs RMM.
Does the identity of the Top Management appointee made (management representative) available to all persons working under the control of your organization?

How do all those with management responsibility demonstrate their commitment to continual improvement of the MNMs RMM?

Does your organization ensure that persons in the workplace take responsibility for the aspects of Occupational, Health and Safety over which they have control, including adhering to the organization's applicable MNMs RMM requirements?

4.4.2 Competence, training and awareness

How does your organization ensure that all persons working for them, or under their control (e.g. staff, contractors, shift workers, casual staff, labour hire etc) with MNMs, are competent to undertake the tasks that can impact on Occupational, Health and Safety? Note: Assessment of competence can be on the basis of appropriate education, training and/or experience?

Has your organization retained competency associated records?

Does your organization identify training needs associated with its MNMs risks and its MNMs RMM?

Has training, or other actions required to meet these needs been delivered, the effectiveness of the training evaluated and associated records retained?

Has a procedure(s) been established, implemented and maintained to ensure that the people working for, or under the control of your organization are aware with the MNMS RMM requirements?

Has a procedure(s) been established, implemented and maintained to ensure that the people working for, or under the control of your organization are aware of

- a) the Occupational, Health and Safety consequences, actual or potential, of their work activities, their behaviour and the Occupational, Health and Safety benefits of improved personal performance?
- b) their roles and responsibilities and importance of conforming to the MNMs Risk Management policy, procedures and to the requirements of their MNMs RMM including emergency preparedness and response requirements?
- c) do they understand the potential consequences if they deviate from the specified procedures?

Do the training procedures take into account different levels of

- a) responsibility, ability, language skills and literacy; and
- b) risk

4.4.3 Communication, participation and consultation

4.4.3.1 Communication

Has your organization established, implemented and maintained procedure(s) for internal communication between the various levels and functions of your organization?

Has your organization established, implemented and maintained procedure(s) for communication with contractors and other visitors to the workplace?

Has your organization established, implemented and maintained procedure(s) for receiving, documenting and responding to relevant communication from external interested parties?

Where appropriate, have you included the consolidation processes of MNMs risk information from a variety of sources and considering the sensitive of the information?

4.4.3.2 Participation and consultation

Are the workers informed about the arrangement of their participation and who is their representative(s) on Occupational, Health and Safety matters related to MNMs risks?

Has your organization established, implemented and maintained procedure(s) for the participation of workers by their:

- appropriate involvement in hazard identification, risk assessments and determination of controls;
- appropriate involvement in incident investigation;
- involvement in the development and review of MNMs RMM policies and objectives;
- consultation where there are any changes that affect their Occupational, Health and Safety related to MNMs risks;
- representation on Occupational, Health and Safety related to MNMs matters.

Has your organization established, implemented and maintained procedure(s) for the consultation with contractors where there are changes that affect their Occupational, Health and Safety related to MNMs risks?

Does your organization ensure that, when appropriate, the relevant external interested parties are consulted about pertinent Occupational, Health and Safety matters related with MNMs risks?

Do internal and external stakeholders understand the basis on which decisions are made and the reasons why particular actions are required?

4.4.4 Documentation

Does your organization's MNMs RMM documentation include:

- a) the MNMs risk management policy and objectives;
- b) description of the scope of the MNMs RMM;
- c) description of the main elements of the MNMs RMM and their interaction, and reference to related documents;
- d) documents, including records, required by the model; and
- e) documents, including records, determined by the organization to be necessary to ensure the effective planning, operation and control of processes that relate to the management of its MNMs risks.

Documents, including records, necessary for the effective planning, operation and control of processes related to its MNMs risks?

Is that documentation proportional to the level of complexity and risks concerned and is kept to the minimum required for effectiveness and efficiency?

Has your organization established and maintained a MNMs risk manual?

Does the MNMS risk manual included

- a) the scope of the MNMs RMM,
- b) the description of the main elements of the MNMs RMM and their interaction, and reference to related documents;
- c) the main types of MNMs risks and MNMs risk criteria;
- d) the documented procedures established for the MNMs RMM, or reference to them.

4.4.5 Control of documents

Has your organization established, implemented and maintained a procedure(s) for controlling all documents required by this MNMs RMM?

Are the documents approved for adequacy before they are issued?

Does the organization ensure that changes and the current revision status of documents are identified?

Does the organization ensure that relevant versions of applicable documents are available at points of use?

Are documents legible, readily identifiable and available at points of use?

Are the external documents controlled their distribution?

Does it prevent the unintended use of obsolete documents and apply suitable identification to them if they are retained for any purpose?

4.4.6 MNMs Operational control
How has your organization determined the operations and activities that are associated with the identified risk(s) and implementation of controls are necessary to manage the MNMs risk(s).
Has the management of change been included (see 4.3.1)?
Has your organization implemented and maintained documented procedures, to cover situations where their absence could lead to deviations from the MNMs RMM policy and objectives?
Has your organization implemented and maintained operational criteria in the procedures?
Has your organization implemented and maintained operational control, as applicable, to your organization and its activities?
Has your organization implemented and maintained controls related to contractors and other visitors to the workplace?
Has your organization implemented and maintained controls related to purchased goods, equipment and services used by the organization and communication applicable procedures and requirements for stakeholders?
Has your organization implemented and maintained controls related to the stakeholders of the organization?
4.4.7 MNMs emergencies preparedness and response
Has your organization established, implemented and maintained a procedure(s) to identify the potential emergency situations related to MNMs risks? and to response to such emergency situations?
Does the procedure(s) cover how your organization will respond to actual emergency situations related to MNMs risks?
Does the procedure(s) cover how your organization will prevent or mitigate the associated adverse occupational, health and safety matters related to MNMs risks consequences?
Has your organization take into account the needs of relevant interested parties when it plan its emergency response?
How does your organization test these procedure(s) to be able to respond to these emergency situations and, where practicable, do you involve relevant interested parties?
Has your organization test these procedure(s) to be able to respond to these emergency situations?
Is this testing carried out periodically?
Does your organization periodically review, revise and update its emergency preparedness and response procedure(s) after the completion of the scheduled test and after the occurrence of an emergency situation, where necessary? (see 4.5.3)
Has your organization taken into account especially those activities related to MNMs risk that support the products and / or services of the organization?
Do these procedures ensure the resilience of the organization with minimum conditions for continuing to operate in the most effective manner?
Do the recovery procedure(s) in activity to an interruption determine:
Does recovery procedure(s) determine the minimum conditions necessary for the continuation of the activities of the organization?
Does recovery procedure(s) determine the period within which the activity must be recovered to the conditions set after an interruption;
Does recovery procedure(s) determine the steps and actions to take when the interrupt occurs ,
Does recovery procedure(s) determine protocols appropriate internal and external communication ;
Does recovery procedure(s) determine the persons responsible for managing the recovery of such activities ;

Does recovery procedure(s) determine the resources needed to deal with the recovery of activity.
Has your organization periodically reviewed and modified, where necessary, procedures for recovery of activity to an interruption of the activity of the organization, taking into account the needs of relevant stakeholders as appropriate?
4.5 CHECKING
4.5.1 Monitoring and measurements of MNMs risk management activities
Has your organization established, implemented and maintained a procedure(s) to monitor and measure MNMs RMM performance?
Does the procedure(s) provide for performance measures that track conformity with the programs, controls and operational criteria as well as the qualitative and quantitative measures appropriate to the needs of the organization?
Does the procedure(s) provide for monitoring of the extent to which the organization's MNMs RMM objectives are met?
Does the procedure(s) provide for monitor the effectiveness of the controls (for health as well as for safety related to MNMs risks)?
Does the procedure(s) provide for proactive measures of performance that monitor conformance with the MNMs RMM programme(s), controls and operational criteria?
Does the procedure(s) provide for reactive measures of performance that monitor ill health, incidents (including incidents, accidents, near-misses, etc.), and other historical evidence of deficient MNMs RMM performance?
Does the procedure(s) provide for detecting changes that may occur in the context of the organization, including changes to MNMs risk criteria and the risk itself which can require revision of corrective and preventive actions?
Does the procedure(s) provide for recording of data and results of monitoring and measurement sufficient to facilitate subsequent corrective action and preventive action analysis?
Does the procedure(s) provide for identifying emerging MNMs risks?
Are the equipments calibrated or verified and maintained (procedure)? Are calibration or verification records retained?
Does the organization define clearly the responsibilities of performance measurement and monitoring?
4.5.2 Legal compliance evaluation
Has your organization established, implemented and maintained a procedure(s) for periodically evaluating its compliance with the applicable legal and other requirements identified in clause 4.3.2 of this standard?
Has your organization evaluated its compliance with other requirements identified in clause 4.3.2 of this standard?
Are the records of the results of these periodic evaluations maintained?
4.5.3 Incident investigation, nonconformity, corrective action and preventive action
4.5.3.1 Event and Incident investigation
Has your organization established, implemented and maintained a procedure(s) to record, investigate and analyze incidents?
Does your organization undertake these investigations in a timely manner? (Note: You may also want to define what your organization considers timely).
Does your organization use the Non-conformity, Corrective & Preventive Action system to deal with any actions? (see 4.5.3.2)
Does your organization document and maintain the results of the incident investigations?

4.5.3.2 Nonconformity, corrective action and preventive action

Has your organization established, implemented and maintained a procedure(s) for dealing with actual and potential non-conformities, and corrective and preventive action?

Does the procedure(s) define requirements for identifying and correcting non-conformities and taking action to mitigate the resulting MNMs risk consequences?

Does the procedure(s) define requirements for investigating the non-conformities, determining their causes and take action to avoid their recurrence?

Does the procedure(s) define requirements for evaluating the need for actions to be taken to prevent non-conformities, and implementing appropriate actions?

Does the procedure(s) define requirements for recording the results of corrective and preventive actions taken?

Does the procedure(s) define requirements for reviewing the effectiveness of corrective and preventive actions?

When your organization's corrective and preventative action system identifies new or changed hazards related to MNMs risk and controls, does your procedure require your organization to undertake a risk assessment prior to implementation (of the actions)?

Are the action(s) taken to eliminate the causes of actual and potential non-conformities appropriate to the magnitude of the problem(s) and proportional to the MNMs risk(s) encountered?

Do you ensure that changes (if any) are made in the MNMs RMM documentation?

4.5.4 Control of records

Are the record updated?

Do these records include those that are necessary to demonstrate conformity to the requirements of the standard?

Are it included records of Hazard identification, risk assessment and determining controls?

Are the records legible, identifiable and traceable?

How do you store the MNMs RMM records in order that they are readily retrievable and protected against damage, deterioration or loss?

Do you have a backup procedure for electronic records?

4.5.5 Internal Audit

Has your organization planned, established, implemented and maintained a programme and procedure(s) for periodic internal audits to be conducted?

Do these internal audits determine whether or not the MNMs RMM conforms to planned arrangements for occupational, health and safety matters related to MNMs risks, including the requirements of this model?

Do these internal audits determine whether or not the MNMs RMM has been properly implemented and maintained?

Do these internal audits determine whether or not the MNMs RMM is effective in meeting your organization's policy and objectives?

Do these internal audits provide information on the results of audits to management?

How does the audit programme take into account the MNMs risk assessments of your organizations concerns, and the results of previous audits?

Does the audit procedure cover the responsibilities, competencies, and requirements for planning and conducting audits, reporting results and retention of associated records?

Does the audit procedure cover the determination of audit criteria, scope, frequency and methods?

Has your organization carried out an internal audit?

Are auditors competent, objectives and impartial of the audit process?
4.6 MANAGEMENT REVIEW
Has your organization's top management (at planned intervals) reviewed the MNMs RMM, to ensure its continuing suitability, adequacy and effectiveness?
Does the review include assessing opportunities for improvement and the need for changes to the MNMs RMM, including the MNMs RMM policy and objectives?
Do the inputs to management review include:
Do the inputs to management review include results from internal audits and evaluations of compliance with legal and other requirements related to occupational, health and safety matters related to MNMs risks?
Do the inputs to management review include the results of participation and consultation?
Do the inputs to management review include relevant communication from external parties, including complaints?
Do the inputs to management review include the MNMs RMM performance of your organization?
Do the inputs to management review include the extent to which the objectives have been met?
Do the inputs to management review include the status of incident investigations, corrective and preventive actions
Do the inputs to management review include follow-up actions from previous management reviews
Do the inputs to management review include changing circumstances, including developments in legal and other requirements related to occupational, health and safety matters related to MNMs risks, and
Do the inputs to management review include recommendations for improvement?
Do the outputs from the management review include decisions and actions related to possible changes to the MNMs RMM policy, objectives, resources, MNMs RMM performance and other elements of the MNMs RMM, and consistent with the commitment to continual improvement?
Are the records of the management reviews retained and made available for communication and consultation?
Has your organization carried out a management review?
4.6.2 Data analysis
Has your organization determinate, collected and analyzed appropriate data to demonstrate the suitable and effectiveness of the MNMs RMM and evaluated where continual improvement of the effectiveness of the MNMs RMM can be made?
Has the data generated as a result of monitoring and measurement and from other relevant sources been included?
4.6.3 Continual improvement
Has your organization continually improved the effectiveness of the MNMs RMM through the use of the MNMs risk management policy, objectives, goals and programmes, audit results, analysis of data, corrective and preventive actions and management review?

7 REFERENCES OF KNOWLEDGE

SCAFFOLD Report SPD14 – Guide for the implementation of a Risk Management Model in relation with manufactured nanomaterials (MNMs) in the construction sector. 15.10.2014

SCAFFOLD Report SPD3- Roadmap for occupational safety in relation with manufactured nanomaterials (MNMs) in the construction sector

OHSAS 18002:2008, Occupational health and safety management systems — Guidelines for the implantation of OHSAS 18001

ISO/TR 31004:2013 Risk management-Guidance for the implementation of ISO 31000

Construction sector guides for implementation of management systems (ISO 9001 and ISO 14001, AENOR).