Advisory Circular

U.S. Department of Transportation
Federal Aviation Administration

Subject: Voluntary Safety Management System for Other Regulated Entities Transporting Dangerous Goods by Air	**Date:** 08/04/23 **Initiated by:** AXH-1	**AC No:** 120-119

This Advisory Circular (AC) provides information on how entities subject to requirements codified at Title 49 of the Code of Federal Regulations (CFR) parts 171-180 (e.g., entities performing functions such as, but not limited to, handling or shipping of dangerous goods by air and hereinafter referred to as "other regulated entities") may choose to voluntarily implement a Safety Management System (SMS) as described in Title 14 CFR, part 5 – *Safety Management Systems*.

This document addresses general SMS principles and explains certain regulatory requirements outlined in 14 CFR part 5. Part 5 describes the general SMS framework and serves as a non-binding basis for the development and implementation of voluntary SMS programs. This AC also provides guidance to organizations on how to use the SMS principles included in part 5 as a basis to develop and implement a voluntary SMS program and how to submit such a voluntary program to the FAA's Office of Hazardous Materials Safety (AXH) for acceptance.

For context, an SMS is the formal, top-down, organization-wide approach to managing safety risk and assuring the effectiveness of safety risk controls. It includes systematic procedures, practices, and policies for the management of safety risk. An SMS is intended to be designed, developed, and integrated into existing operations and business decision-making processes. The SMS framework will assist an organization's leadership, management teams, and employees in mitigating risks and making smarter, data-informed safety decisions.

This document provides non-binding recommendations on how to use existing requirements as a basis to develop a voluntary SMS program. The FAA encourages organizations to develop and implement SMS into their business processes in a way that is scalable to their unique operations, as there is not a one-size-fits-all SMS.

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CHAPTER 1. INTRODUCTION

1-1. PURPOSE. This Advisory Circular (AC) provides information for other regulated entities (e.g., entities storing, packaging, handling, shipping, or performing other functions in support of transporting dangerous goods by air in accordance with Title 49 of the Code of Federal Regulations (CFR) parts 171-180) choosing to voluntarily implement a Safety Management System (SMS). Accordingly, compliance with the recommendations in this document or with the guidance material discussed in this document does not relieve regulated entities from complying with applicable requirements outlined in the Hazardous Materials Regulations.

This guidance is not legally binding in its own right and will not be relied upon by the FAA as a separate basis for affirmative enforcement action or other administrative penalty. Conformity with the guidance is voluntary only and nonconformity will not affect rights and obligations under existing statutes and regulations.

This document addresses general SMS precepts and explains some of the regulatory requirements outlined in 14 CFR part 5. While part 5 does not apply to voluntary SMS programs, it describes the general SMS framework and serves as a non-binding basis for the development and implementation of voluntary SMS programs. This AC also provides guidance to organizations on how to use the SMS principles included in part 5 as a basis to develop and implement a voluntary SMS program and how to submit such a voluntary program to the FAA's Office of Hazardous Materials Safety (AXH) for acceptance.

1-2. BACKGROUND.

    a. **About SMS.** SMS is a formal, top-down, organization-wide approach to managing safety risk and assuring the effectiveness of safety risk controls. It includes systematic procedures, practices, and policies for the management of safety risk. The defining characteristic of an SMS is that it is a decision-making system. An SMS is not a one-size-fits-all solution and does not have to be an extensive, expensive, or sophisticated array of techniques or procedures to be effective. Rather, an SMS should be designed and implemented to address the operations of a specific organization. It is structured around four components: Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion.

- Safety Policy. Documented commitment to safety, which defines an organization's safety objectives and the accountabilities and responsibilities of its employees in regards to safety.

- Safety Risk Management (SRM). A process within the SMS composed of describing the system, identifying the hazards, and analyzing, assessing, and controlling risk.

- Safety Assurance (SA). Processes within the SMS that function systematically to ensure the performance and effectiveness of safety risk controls, and that the organization meets or exceeds its safety objectives through the collection, analysis, and assessment of information.

- Safety Promotion. A combination of training and communication of safety information to support the implementation and operation of an SMS in an organization.

    b. **Shared responsibility.** Aviation safety is not the sole or unique responsibility of any one

party. Instead, it results from the collaboration of all stakeholders, including but not limited to the government, air carriers, operators, airports, repair centers, other FAA certificate holders, other regulated entities, and other parties directly or indirectly participating in activities related to aviation or supported by aviation. Stakeholders' internal processes, external interfaces, collaboration efforts, and integrated business processes impact the overall safety of the national airspace system.

1-3. APPLICABILITY.

Large organizations with a national or global aviation focus. No regulation precludes an organization of any size from voluntarily implementing an SMS. This AC, however, provides guidance appropriate for large organizations with a national or global aviation focus that wish to establish a voluntary SMS to enhance safety due to the complexity of their operations or the volume of dangerous goods transported by air. Large organizations that may consider a voluntary SMS include, but are not limited to, those that process or offer dangerous goods cargo for air transportation, regardless of whether they are labeled as such, shippers, e-commerce companies, freight forwarders, ground handlers, and/or distribution centers, and may have a significant impact in national or global aviation. The FAA encourages these organizations to use the principles addressed in this AC to develop an SMS to identify, analyze, mitigate, and control risks. An SMS is particularly useful for those business processes within an organization that interface with and have the potential to introduce risk into the aviation system.

1-4. RELATED READING MATERIAL. For descriptive information of SMS design and international safety management best practices, please refer to the current version of ICAO Doc 9859 – *Safety Management Manual,* AC 120-92 – *Safety Management Systems for Aviation Service Providers*, and other available reference material located on the FAA's SMS website at https://www.faa.gov/about/initiatives/sms/.

1-5. APPLICABILITY OF THE FREEDOM OF INFORMATION ACT (FOIA). Title 49 U.S.C. 44735 offers statutory protection from disclosure under the Freedom of Information Act, pursuant to 5 U.S.C. 552(b)(3), for certain reports, data, or other information that are submitted to the FAA voluntarily and that are not required to be submitted to the Administrator under any other provision of law. Section 44735(b)(4) extends the limitation on disclosure to ''reports, data, or other information produced or collected for purposes of developing and implementing a safety management system acceptable to the Administrator.'' Section 44735(b)(5) also extends the limitation on disclosure to ''reports, analyses, and directed studies, based in whole or in part on reports, data or other information'' related to the development and implementation of a safety management system.

1-6. PAPERWORK REDUCTION ACT (PRA). A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the PRA unless that collection of information displays a currently valid Office of Management and Budget (OMB) Control Number. The OMB Control Number for this information collection is 2120-0811. All responses to this collection of information are voluntary.

1-7. CONTACT INFORMATION. For additional information, suggestions, and for voluntary SMS implementation plan submissions, please contact the FAA Office of Hazardous Materials Safety at 9-ASH-AXH-SMS@faa.gov.

CHAPTER 2. FAA SAFETY MANAGEMENT SYSTEM (SMS) PRINCIPLES

2-1. INTRODUCTION. This chapter is structured around the SMS principles outlined in 14 CFR part 5. Part 5 applies to certificate holders under 14 CFR part 119 authorized to conduct operations in accordance with the requirements of part 121. Other regulated entities may choose to adopt voluntarily an SMS. The FAA welcomes such voluntary implementation of SMS.

The information provided herein serves as a non-binding basis for the development and implementation of such a voluntary SMS program. The following sections provide guidance to organizations on how to use the SMS principles included in part 5 as a basis to develop and implement their voluntary SMS programs. The SMS requirements are organized within a framework of four essential components: Safety Policy, SRM, SA, and Safety Promotion. The components work together to provide a systematic approach to managing the safety risk. This chapter also contains short descriptions of each SMS component, along with the following information to enhance understanding:

   a.   Regulatory Text Box. An excerpt of 14 CFR part 5 regulatory text is included for reference and ease of understanding, without the need to cross-reference additional documents. For the purposes of this AC, consider the term "certificate holder" as your "organization." Organizations base their voluntary SMS on the principles and processes established in part 5.

   b.   Discussion. This section includes supporting information and best practices as it relates to implementing an SMS.

2-2. SUBPART A: GENERAL.

   a.   Applicability: Audience.

> **§ 5.1 Applicability.**
>
> (a) A certificate holder under part 119 of this chapter authorized to conduct operations in accordance with the requirements of part 121 of this chapter must have a Safety Management System that meets the requirements of this part and is acceptable to the Administrator by March 9, 2018.
> (b) A certificate holder must submit an implementation plan to the FAA Administrator for review no later than September 9, 2015. The implementation plan must be approved no later than March 9, 2016.
> (c) The implementation plan may include any of the certificate holder's existing programs, policies, or procedures that it intends to use to meet the requirements of this part, including components of an existing SMS.

Discussion. The SMS required by 14 CFR part 5 was intended to apply to part 121 certificate holders; however, for the purposes of this AC, consider the term "certificate holder" as your "organization". The deadlines indicated in the excerpt are not applicable to this AC. That said, to initiate the voluntary process of implementing an SMS within your organization, and ultimately gain FAA acceptance of your voluntary SMS, your organization is expected to develop and submit an SMS implementation plan to the FAA Office of Hazardous Materials Safety. (Refer to Chapter 1, paragraph 1-7, for FAA contact information.)

b. General Requirements.

> **§ 5.3 General requirements.**
>
> (a) Any certificate holder required to have an SMS under this part must submit the Safety Management System to the Administrator for acceptance. The SMS must be appropriate to the size, scope, and complexity of the certificate holder's operation and include at least the following components:
>   (1) Safety policy in accordance with the requirements of subpart B of this part;
>   (2) Safety risk management in accordance with the requirements of subpart C of this part;
>   (3) Safety assurance in accordance with the requirements of subpart D of this part; and
>   (4) Safety promotion in accordance with the requirements of subpart E of this part.
> (b) The Safety Management System must be maintained in accordance with the recordkeeping requirements in subpart F of this part.
> (c) The Safety Management System must ensure compliance with the relevant regulatory standards in chapter I of Title 14 of the Code of Federal Regulations.

Discussion. The SMS should be scalable to the operation of the organization. The difference between a large, medium, and small organization's SMS is primarily one of size, scope, and complexity of the operations to be covered, volume of data available, the size of the employee workforce, and the resources needed to manage the organization. The SMS tenets, with respect to the four components, are the same regardless of the size of your organization. The SMS functions within each component do not need to be extensive or complex to be effective. All businesses, regardless of size, may use existing systems, programs, and resources to document and track safety issues to resolution.

c. Definitions: Standardized SMS Terms

> **§ 5.5 Definitions.**
>
> Hazard means a condition that could foreseeably cause or contribute to an aircraft accident as defined in 49 CFR 830.2.
>
> Risk means the composite of predicted severity and likelihood of the potential effect of a hazard.
>
> Risk control means a means to reduce or eliminate the effects of hazards.
>
> Safety assurance means processes within the SMS that function systematically to ensure the performance and effectiveness of safety risk controls and that the organization meets or exceeds its safety objectives through the collection, analysis, and assessment of information.
>
> Safety Management System (SMS) means the formal, top-down, organization-wide approach to managing safety risk and assuring the effectiveness of safety risk controls. It includes systematic procedures, practices, and policies for the management of safety risk.
>
> Safety objective means a measurable goal or desirable outcome related to safety.
>
> Safety performance means realized or actual safety accomplishment relative to the organization's safety objectives.
>
> Safety policy means the certificate holder's documented commitment to safety, which defines its safety objectives and the accountabilities and responsibilities of its employees in regards to safety.
>
> Safety promotion means a combination of training and communication of safety information to support the implementation and operation of an SMS in an organization.
>
> Safety Risk Management means a process within the SMS composed of describing the system, identifying the hazards, and analyzing, assessing and controlling risk.

Discussion. This section contains standardized terms and definitions used in an SMS. Organizations use these terms within their SMS to facilitate a common safety language and support communication and collaboration.

2-3. SUBPART B: SAFETY POLICY.

    a. **Safety Policy**

> **§ 5.21 Safety policy.**
>
>   (a) The certificate holder must have a safety policy that includes at least the following:
>   1) The safety objectives of the certificate holder.
>   2) A commitment of the certificate holder to fulfill the organization's safety objectives.
>   3) A clear statement about the provision of the necessary resources for the implementation of the SMS.
>   4) A safety reporting policy that defines requirements for employee reporting of safety hazards or issues.
>   5) A policy that defines unacceptable behavior and conditions for disciplinary action.
>   6) An emergency response plan that provides for the safe transition from normal to emergency operations in accordance with the requirements of § 5.27.
>   (b) The safety policy must be signed by the accountable executive described in § 5.25.
>   (c) The safety policy must be documented and communicated throughout the certificate holder organization.
>   (d) The safety policy must be regularly reviewed by the accountable executive to ensure it remains relevant and appropriate to the certificate holder.

Discussion. Safety Policy is the documented commitment to safety, which defines an organization's safety objectives and the accountabilities and responsibilities of its employees in regards to safety. Essentially, safety policy is a concise document from the accountable executive that conveys the organization's basic commitments to safety management. It provides a basis for more detailed setting of objectives for planning and performance measurement, assignment of responsibility, and reporting, including clear statements regarding behavioral and performance expectations. The safety policy may be supported by additional documents that expand in specific areas, and, where applicable, it may also set out procedures.

    b. **Safety Accountability and Authority.**

> **§ 5.23 Safety accountability and authority.**
>
>   (a) The certificate holder must define accountability for safety within the organization's safety policy for the following individuals:
>   (1) Accountable executive, as described in § 5.25.
>   (2) All members of management in regard to developing, implementing, and maintaining SMS processes within their area of responsibility, including, but not limited to:
>   (i) Hazard identification and safety risk assessment.
>   (ii) Assuring the effectiveness of safety risk controls.
>   (iii) Promoting safety as required in subpart E of this part.
>   (iv) Advising the accountable executive on the performance of the SMS and on any need for improvement.
>   (3) Employees relative to the certificate holder's safety performance.
>   (b) The certificate holder must identify the levels of management with the authority to make decisions regarding safety risk acceptance.

Discussion. This SMS process requires defined accountability for achieving safety performance

objectives within the organization's safety policy for all levels of the organization's staff. "Accountability" as used here, refers to active management and line employee involvement and action in managing and maintaining safety performance. An organization defines accountability by ensuring each of its management and line employees is aware of his or her specific role within SMS and actively participates in carrying out his or her SMS-related duties.

c. **Designation and Responsibilities of Required Safety Management Personnel.**

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§ 5.25 Designation and responsibilities of required safety management personnel.

(a) Designation of the accountable executive. The certificate holder must identify an accountable executive who, irrespective of other functions, satisfies the following:
  (1) Is the final authority over operations authorized to be conducted under the certificate holder's certificate(s).
  (2) Controls the financial resources required for the operations to be conducted under the certificate holder's certificate(s).
  (3) Controls the human resources required for the operations authorized to be conducted under the certificate holder's certificate(s).
  (4) Retains ultimate responsibility for the safety performance of the operations conducted under the certificate holder's certificate.

(b) Responsibilities of the accountable executive. The accountable executive must accomplish the following:
  (1) Ensure that the SMS is properly implemented and performing in all areas of the certificate holder's organization.
  (2) Develop and sign the safety policy of the certificate holder.
  (3) Communicate the safety policy throughout the certificate holder's organization.
  (4) Regularly review the certificate holder's safety policy to ensure it remains relevant and appropriate to the certificate holder.
  (5) Regularly review the safety performance of the certificate holder's organization and direct actions necessary to address substandard safety performance in accordance with § 5.75.

(c) Designation of management personnel. The accountable executive must designate sufficient management personnel who, on behalf of the accountable executive, must be responsible for the following:
  (1) Coordinate implementation, maintenance, and integration of the SMS throughout the certificate holder's organization.
  (2) Facilitate hazard identification and safety risk analysis.
  (3) Monitor the effectiveness of safety risk controls.
  (4) Ensure safety promotion throughout your organization as required in subpart E of this part.
  (5) Regularly report to the accountable executive on the performance of the SMS and on any need for improvement.

Discussion. The success of the SMS is reliant on the appropriate designation of safety personnel within an organization. It is important to consider identifying a person in the organization who holds the ultimate decision-making authority over the organization's operations. This person is responsible for planning, organizing, directing, and controlling the personnel, organizational structure, financial, and other resources necessary for safe operations. In smaller organizations, the accountable executive may personally participate in, or directly supervise, operational processes. This individual may serve in multiple positions within the company. In larger organizations, the accountable executive is responsible for ensuring that management personnel are clearly designated for ensuring the safety of operational and safety management processes.

In addition to designating the accountable executive, organizations should ensure that sufficient personnel are available to provide support for essential SMS functions, such as analysis, assistance

to operational managers in meeting their safety management responsibilities, and acting as a safety advisor to the accountable executive. These responsibilities may be carried out as collateral duties by managers, or the organization could assign the tasks of supporting SMS functions to other personnel. For example, some organizations may choose to use their existing required management personnel to fulfill these responsibilities. Other organizations may organize a Safety Department with a number of persons, or use existing personnel within each operational division. Personnel designated to perform this function should have direct access to the accountable executive to report on the safety performance of the operation and recommend any necessary improvements.

d. Coordination of Emergency Response Planning.

> **§ 5.27 Coordination of emergency response planning.**
>
> Where emergency response procedures are necessary, the certificate holder must develop and the accountable executive must approve as part of the safety policy, an emergency response plan that addresses at least the following:
>
> (a) Delegation of emergency authority throughout the certificate holder's organization;
> (b) Assignment of employee responsibilities during the emergency; and
> (c) Coordination of the certificate holder's emergency response plans with the emergency response plans of other organizations it must interface with during the provision of its services.

Discussion. The plan should provide procedures for management decision-making and action in an emergency. This should include a line of succession of management authority sufficient to respond to emergencies. Coordination of your emergency response plans with the emergency response plans of other organizations might include first responders to accidents or incidents, and dangerous goods authorities. The plan might also address how your organization returns or transitions to normal operations after the emergency condition subsides. Many organizations already have emergency response plans that may be used to fulfill this requirement.

2-4. SUBPART C: SAFETY RISK MANAGEMENT.

a. Applicability: Requirements to Apply SRM.

> **§ 5.51 Applicability.**
>
> A certificate holder must apply safety risk management to the following:
>
> (a) Implementation of new systems.
> (b) Revision of existing systems.
> (c) Development of operational procedures.
> (d) Identification of hazards or ineffective risk controls through the safety assurance processes in subpart D of this part.

Discussion. SRM is a process within the SMS composed of describing the system, identifying the hazards, and analyzing, assessing, and controlling risk. To know when the SRM process may be required, it is important to know what a system is. Systems could be people, hardware, software, information, procedures, facilities, services, and other support facets that are directly related to the organization's safety activities. Examples of such systems could include:
- Relationships with vendors and customers to control risk in air transportation;
- Classification of Dangerous Goods;
- Prevention of undeclared or misdeclared shipments;

- Cargo acceptance and rejection procedures;
- Controls to prevent unintended risk entering the aviation system;
- Internal Interfaces;
- Safety risk introduced by external interfacing entities;
- Ground handling and servicing;
- Distribution center operations;
- Cargo handling;
- Training;
- Analysis of unintended events;
- Robotics;
- Software to detect properties of materials;
- Software to detect known suspicious shippers;
- Procedures for new vendors;
- Inspection and verification processes for new business relationships;
- Weight and Balance;
- UAS Delivery; or
- Automation.

Within these systems are subsystems. Some examples of subsystems include training curricula and programs, self or third-party auditing, process controls, software system designs, process auditing, and reporting follow-up processes.

The SRM process is triggered when proposed new systems or changes to existing systems are being considered. For example, changes to your operation could include the addition of locations of operations; opening or closing of facilities; adding or changing contractual arrangements for services, new vendors or customers; additions or modification of products; addition of different types of operations (such as cargo consolidation); acceptance of dangerous goods; delivery by UAS; or other types of changes. Major changes to a system are not all that will trigger the SRM process. That process is also triggered by any revision of an existing system, development of new operational procedures, or identification of hazards or ineffective risk controls. However, the level of SRM scrutiny appropriate for smaller changes to a system may be significantly less than what is required for major changes. This AC does not address SRM processes and procedures not related to aviation operations.

b. System Analysis and Hazard Identification.

> **§ 5.53 System analysis and hazard identification.**
>
> (a) When applying safety risk management, the certificate holder must analyze the systems identified in § 5.51. Those safety analyses must be used to identify hazards under paragraph (c) of this section, and developing and implementing risk controls related to the system under § 5.55(c).
> (b) In conducting the system analysis, the following information must be considered:
>   (1) Function and purpose of the system.
>   (2) The system's operating environment.
>   (3) An outline of the system's processes and procedures.
>   (4) The personnel, equipment, and facilities necessary for operation of the system.
> (c) The certificate holder must develop and maintain processes to identify hazards within the context of the system analysis.

Discussion. System analysis is the primary means of proactively identifying and addressing potential problems before the new or revised systems or procedures are put into place. The system analysis should explain the functions and interactions among the hardware, software, people, and environment that make up the system in sufficient detail to identify hazards and perform risk analyses. The process is started by describing the system. (This can be accomplished through flowcharting the system or providing some other written description.) The hazard identification process flows from the system analysis. In hazard identification, you would ask: What could go wrong with your organization's processes, under typical or abnormal operational conditions, that could cause or contribute to an unintended incident or accident?

c. Safety Risk Assessment and Control.

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§ 5.55 Safety risk assessment and control.

    (a) The certificate holder must develop and maintain processes to analyze safety risk associated with the hazards identified in § 5.53(c).

    (b) The certificate holder must define a process for conducting risk assessment that allows for the determination of acceptable safety risk.

    (c) The certificate holder must develop and maintain processes to develop safety risk controls that are necessary as a result of the safety risk assessment process under paragraph (b) of this section.

    (d) The certificate holder must evaluate whether the risk will be acceptable with the proposed safety risk control applied, before the safety risk control is implemented.

Discussion. The safety risk analysis consists of determining the severity and likelihood associated with identified hazards using an appropriate quantitative or qualitative method. For each identified hazard, define the potential for injury and damage that may result from an incident related to operating while exposed to the hazard. In order to determine potential for injury and damage, you need to define the likelihood of occurrence of an incident or accident, and severity of the injury or damage that may result. It is important to remember that the likelihood and severity do not refer to the hazard, but to a potential occurrence (accident or incident) related to the hazard.

Once the risk is analyzed, you should assess whether the risk is acceptable. Remember this includes an assessment of the risk once interfaced into the aviation system. The aviation supply chain relies on and trusts each entity in the chain to prevent the introduction of a hazard.

After hazards and associated risk are fully understood, risk controls should be designed to mitigate the risk to an acceptable level. Examples of risk controls include new processes, equipment, completed training, new supervisory controls, new equipment or hardware, new software, changes to staffing arrangements, or any of a number of other system changes. In short, risk controls can include anything that would lessen the likelihood or severity of a potential incident/accident. Next, look at the system with the proposed control in place to determine if the level of risk is now acceptable, and the proposed control does not introduce unintended consequences or new hazards. The risk remaining is commonly referred to as residual risk.

2-5. SAFETY ASSURANCE.

   a.   **Safety Performance Monitoring and Measurement**

> **§ 5.71 Safety performance monitoring and measurement.**
>
>   (a) The certificate holder must develop and maintain processes and systems to acquire data with respect to its operations, products, and services to monitor the safety performance of the organization. These processes and systems must include, at a minimum, the following:
>   (1) Monitoring of operational processes.
>   (2) Monitoring of the operational environment to detect changes.
>   (3) Auditing of operational processes and systems.
>   (4) Evaluations of the SMS and operational processes and systems.
>   (5) Investigations of incidents and accidents.
>   (6) Investigations of reports regarding potential non-compliance with regulatory standards or other safety risk controls established by the certificate holder through the safety risk management process established in subpart C of this part.
>   (7) A confidential employee reporting system in which employees can report hazards, issues, concerns, occurrences, incidents, as well as propose solutions and safety improvements.
>   (b) The certificate holder must develop and maintain processes that analyze the data acquired through the processes and systems identified under paragraph (a) of this section and any other relevant data with respect to its operations, products, and services.

Discussion: Safety performance monitoring focuses on the following data acquisition processes: Monitoring of Operational Processes; Monitoring of the Operational Environment; Auditing of Operational Processes; Evaluation of the SMS and Operational Processes; Incidents and Accidents Investigations; Potential Noncompliance Investigations; and Confidential Employee Reporting System. Examples include, but not limited to;

   - <u>Monitoring</u>. To observe the day-to-day, process-by-process, job-by-job performance of operational systems and their associated risk controls, to include reviewing data collected for operational purposes to look for anything of safety significance, and new or changed conditions.

   - <u>Auditing</u>. To provide the process owners with a means to obtain information about the performance of systems in their area of responsibility.

   - <u>Evaluation</u>. To provide a source of information to the organization regarding the safety performance of operational systems and the SMS.

   - <u>Investigation of Incidents and Accidents</u>. To gather information on accidents and incidents to identify potential weaknesses in operational systems.

   - <u>Investigation of Potential Noncompliance</u>. To obtain information to determine compliance with regulations, as well as underlying policies and procedures.

   - <u>Confidential Employee Reporting System</u>. To provide a means for employees to communicate safety information to management.

Safety performance measurement focuses on the analysis of the data collected during the monitoring stage with the goal being to organize and examine the data to determine its meaningfulness in making safety decisions. Analysis involves examining data acquired from various sources in order to make inferences about the safety performance of operational systems and the SMS.

   b. **Safety Performance Assessment.**

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§ 5.73 Safety performance assessment.

(a) The certificate holder must conduct assessments of its safety performance against its safety objectives, which include reviews by the accountable executive, to:
   (1) Ensure compliance with the safety risk controls established by the certificate holder;
   (2) Evaluate the performance of the SMS.
   (3) Evaluate the effectiveness of the safety risk controls established under § 5.55(c) and identify any ineffective controls.
   (4) Identify changes in the operational environment that may introduce new hazards.
   (5) Identify new hazards.
(b) Upon completion of the assessment, if ineffective controls or new hazards are identified under paragraph (a)(2) through (a)(5) of this section, the certificate holder must use the safety risk management process described in subpart C of this part.

Discussion. Safety performance assessments are accomplished to make decisions regarding safety performance with reference to safety objectives and regulatory compliance. Safety performance data is analyzed, and the results are used for informed decision making. The assessment process is where these decisions are made. Decisions are made by personnel with assigned responsibility and authority. The SA process should consider who makes the decisions regarding whether the company's safety performance is effective, and whether the company is meeting its safety objectives and expectations that are identified in the safety policy. Examples of "generalized outcomes" of an assessment include, but are not limited to:

   •   Performance is acceptable and objectives are being met.

   •   Performance is not acceptable, and analysis suggests the problem lies with conformity with regulations or company policy and procedures, or necessary resources have not been provided. In the event this occurs, corrective action would be warranted.

   •   Conformity with the risk controls and regulations appears to be satisfactory; however, desired results are not being obtained. In the event that this occurs, the SRM processes would be triggered.

   •   New or uncontrolled hazards are discovered. This may be due to new hazards having arisen since the system was designed, or discovery of factors that were overlooked. In this case, as in the previous, the SRM processes should be followed.

The conclusions of the safety assessments are reported to the accountable executive, who possesses ultimate authority to act on such conclusions, as necessary.

   c.   **Continuous Improvement.**

> **§ 5.75 Continuous improvement.**
>
> The certificate holder must establish and implement processes to correct safety performance deficiencies identified in the assessments conducted under § 5.73.

Discussion. This process provides the organization's decision makers with a means to correct safety performance deficiencies identified in the safety performance assessment process. It is designed to facilitate an organization to continuously improve safety performance.

2-6. SUBPART E: SAFETY PROMOTION.

   a.   **Competencies and Training.**

> **§ 5.91 Competencies and training.**
>
> The certificate holder must provide training to each individual identified in § 5.23 to ensure the individuals attain and maintain the competencies necessary to perform their duties relevant to the operation and performance of the SMS.

Discussion. Safety Promotion provides employees with effective SMS training commensurate with their safety responsibilities, and creates a means to deliver organization-wide safety communication. It is imperative to assure that employees attain and maintain the competencies necessary to perform their assigned duties relevant to the operation and performance of the SMS. "Competency" is an observable, measurable set of skills, knowledge, abilities, behaviors, and other characteristics that individuals exhibit as they successfully perform work functions. For example, a Safety Risk and Data Analyst will probably need more detailed SMS training (such as safety risk analysis, system evaluation, system assessment, data mining, auditing, and inspections) than will a package handler. Line managers may need to know more about the potential consequences of safety failures and system failure modes than line employees. Line employees may only need an overview of safety management fundamentals for their operational department (e.g., instructions on how to identify and report safety concerns). It is the responsibility of your organization to determine and communicate its own training needs based on competency requirements.

   b.   **Safety Communication.**

> **§ 5.93 Safety communication.**
>
> The certificate holder must develop and maintain means for communicating safety information that, at a minimum:
>
>   (a) Ensures employees are aware of the SMS policies, processes, and tools relevant to their responsibilities.
>   (b) Conveys hazard information relevant to the employee's responsibilities.
>   (c) Explains why safety actions have been taken.
>   (d) Explains why safety procedures are introduced or changed.

Discussion. It is important for organizations to ensure that employees have current and pertinent safety information. Effective communication involves adjusting the content of the communication and manner in which the information is delivered to match the target employee's role in the

organization. The accountable executive should ensure communication mechanisms are available and are effectively utilized. The delivery system should be appropriate according to the size and complexity of the organization. Safety policy and information could be provided as text; visual media, such as posters or short videos; orally; or through examples. Messages should be consistent and in a form that employees at each level can relate to, and be delivered using whichever media the organization has available. For example, hazard communications regarding risks to aviation and the hazards some products and materials can pose may be in the form of posters, videos, and demonstrations.

2-7. SMS DOCUMENTATION AND RECORDKEEPING.

a. SMS Documentation.

> **§ 5.95 SMS documentation.**
>
> The certificate holder must develop and maintain SMS documentation that describes the certificate holder's:
>   (a) Safety policy.
>   (b) SMS processes and procedures.

Discussion. It is expected that organizations adopting an SMS establish and maintain SMS information, in either paper or electronic form, describing the safety-related processes and procedures, and interfaces between these. Additionally, organizations should also implement a distribution system to ensure that the documents dealing with these processes and procedures are promptly updated whenever there is a change in one or more of these processes or procedures.

b. SMS Records.

> **§ 5.97 SMS records.**
>
>   (a) The certificate holder must maintain records of outputs of safety risk management processes as described in subpart C of this part. Such records must be retained for as long as the control remains relevant to the operation.
>   (b) The certificate holder must maintain records of outputs of safety assurance processes as described in subpart D of this part. Such records must be retained for a minimum of 5 years.
>   (c) The certificate holder must maintain a record of all training provided under § 5.91 for each individual. Such records must be retained for as long as the individual is employed by the certificate holder.
>   (d) The certificate holder must retain records of all communications provided under § 5.93 for a minimum of 24 consecutive calendar-months.

Discussion. The timeline associated with the retention of the documents for outputs of SRM processes would be for as long as they remain relevant to the operation. For risk assessments, this may mean for as long as the organization engages in the activity for which the risk assessment was conducted. For risk controls, it may mean for as long as the risk control remains in effect. The intent to maintain records of outputs, training, and communications does not in itself create any requirement to submit those records to the FAA. However, these records should be made available to the FAA to assist organizations in implementing their voluntary SMS program and to ensure appropriate oversight of the voluntary SMS. Additionally, the recordkeeping component of a voluntary SMS program is not intended to require an organization to retroactively maintain or recreate records of activity before its SMS implementation. Rather, the retention of documents refers to SMS records that apply during and after SMS implementation.

CHAPTER 3. SMS IMPLEMENTATION PROCESS

3-1. Introduction. As stated in Chapter 2, to initiate the process of implementing a voluntary SMS within your organization and ultimately gaining FAA acceptance of the SMS, your organization would develop and submit an SMS implementation plan to the FAA Office of Hazardous Materials Safety. The paragraphs below outline an acceptable means, but not the only means, of developing an implementation plan.

3-2. Developing an SMS Implementation Plan. An implementation plan is a document that outlines the steps the organization plans to take to ensure that it has an SMS that the FAA would accept. The implementation plan does not need to be complex or excessively detailed, but should provide a basic roadmap (e.g., tasks/milestones/resource assignment) for the organization to meet the SMS principles outlined in this AC. The first step in developing an SMS is mapping out and analyzing your organization and its operational environment. More importantly, the plan includes a brief description explaining how your organization already complies with each specified SMS principle and/or how you plan to comply with each principle.

    a.   Gap Analysis. To build an implementation plan, you need to understand your current state of compliance with the SMS principles, as well as programs you may already have that could be used to satisfy the SMS requirements. A gap analysis involves analyzing and assessing your existing programs, systems, processes, and activities with respect to voluntary SMS requirements. Your organization may use any technique to identify what needs to be done to implement an SMS. If you choose to use a gap analysis, the completed gap analysis will provide input for development of your implementation plan.

    b.   Organizational Processes. Most organizations have many of the elements of an SMS in their current operational processes, although those processes may not entirely fulfill the requirements of the principles (e.g., they may be limited in scope (do not cover the entire organization) and interoperability (do not interface sufficiently to form a "system")). If you determine that a process in your organization satisfies an SMS requirement, your gap analysis should document how that process meets the requirements. This may be accomplished by referencing the process or procedure in your system where the requirement is discussed.

3-3. Organizational SMS Implementation Plan Submissions and FAA Acceptance.

    a.   SMS Implementation Plan Submission. An organization should submit its implementation plan using the contact information specified in Chapter 1, paragraph 1-7. Upon the FAA receiving the implementation plan, the FAA will review it and notify the organization of its acceptance. Notification should be in the form of electronic correspondence, specifically via the contact information specified in Chapter 1, paragraph 1-7.

    b.   FAA and Organization Collaboration. The FAA Office of Hazardous Materials Safety encourages continual collaboration with organizations actively implementing accepted plans. Periodic consultations between the FAA and organizations during the process are encouraged to ensure organizations are successful in fully implementing their voluntary SMS.

    c.   FAA Acceptance of an Implemented Voluntary SMS. The organization implements its voluntary SMS when all SMS process documentation (e.g., implementation plan, policies) are complete and published; all process personnel are available and trained; and all hardware/software is available and in the location of its intended use. Upon the FAA reviewing the organization's completion of the implementation, the FAA will validate whether the voluntary SMS is consistent with the principles outlined in this AC. Upon successful validation, the FAA will notify the

organization of its acceptance as possessing an implemented voluntary SMS. Notification will be in the form of electronic correspondence, specifically via the contact information specified in Chapter 1, paragraph 1-7.