Audits – A Vehicle for Change
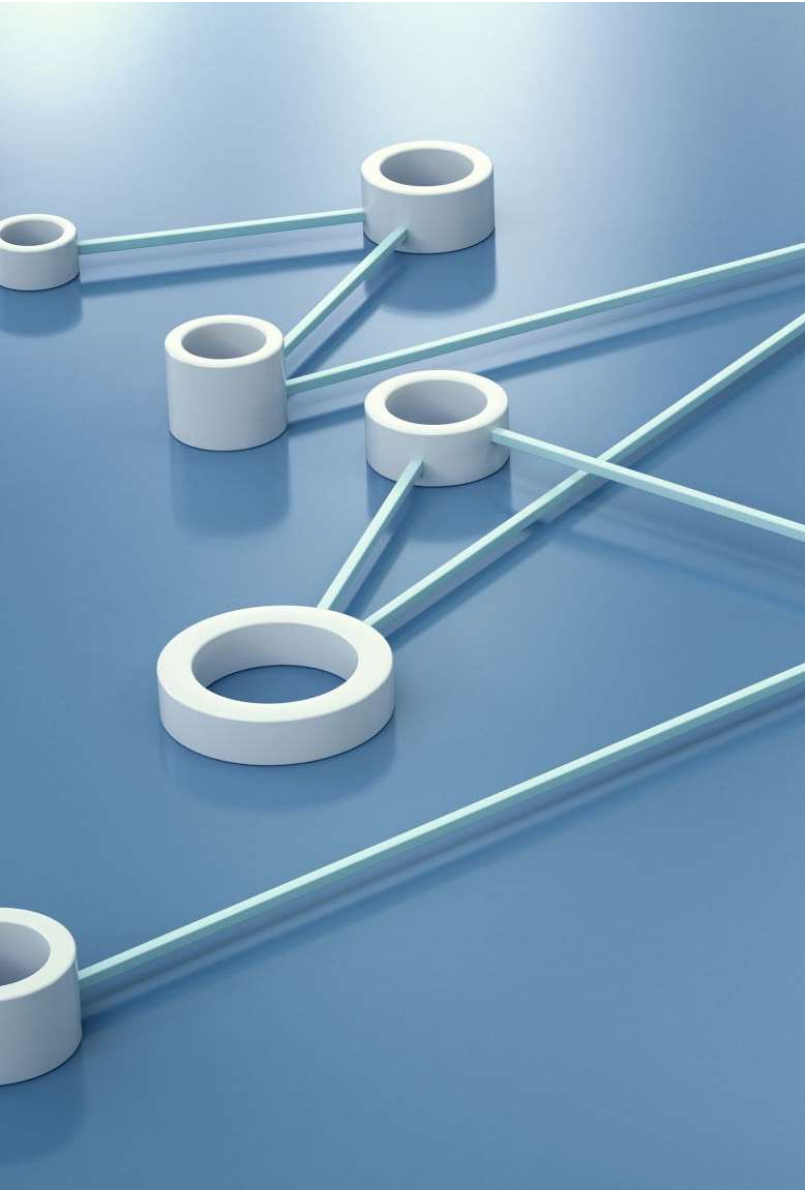
Building a Successful Audit Program with a Process Approach

BCA **BCA Environmental Consultants**

Goals and Concepts for Today

- Integrated Programs – 14001, 45001 and 50001
- Establishing an Audit Program
- Choosing an Auditor
- Audit Plans
- Mock Audit
- Continual Improvement of Audit Program

Integrated Programs

Connect your systems to function together and be audited together

- Aspects, Hazards and Energy Users (Example)
- Compliance Obligations (Example)
- Objectives, Targets, Metrics and Indicators
- Records Retention Lists
- Management of Change
- Monitoring Equipment List

45001 Approach: Process and Position

ASPECTS, HAZARDS AND ENERGY USERS

Process/Area – Tank Farm

Activity	Aspect (14)	Hazard (45)	Energy User (50)
Loading and Unloading Tank Trucks and Storage	Spill/Release Air Emissions Chemical Storage	Slips, Trip or Fall Chemical Exposure Exposure to plant traffic	Pumps – electricity Lights

	Controls		
	Contained and Covered Storage Area Maintained Equipment Liquid Level Monitors Spill Release Response Plan SOP Training	Platform PPE Hazard Communication Confined Space Eye Wash Station SOP Training	Motion sensors Solar Powered Pump

Position – Process Tech

Activity	Aspect (14)	Hazard (45)	Energy Use (50)
Operating Overhead Crane	• Spill/Release	• Slips, Trips and Falls • Falling objects	• Electricity
Operating Forklift	• Spill/Release • Air Emissions	• Collision – Injury • Collision – Property Damage • Falling Objects	• Electricity • Propane
Mold Cleaning – Dry Ice		• Noise • Flying Objects • Burns • Asphyxiation • Repetitive motion	• Air
Mold Maintenance	• Air Emissions	• Flammables • Voltage • Pinch point	

Compliance Obligations

Category	Subcategory	Requirement	Scope	Control
Env	Air Emissions	Minor Source Operating Permit	Tank Farm Reactors	EHS MOP 2-04 Venturi Scrubber
Env	Oil Storage	SPCC - 40 CFR 112	Tank Farm Loading and Unloading	SPCC Plan Containment
Env	Hazardous Waste	RCRA - 40 CFR 262	Tank Farm Reactors	EHS MOP 2-06 EHS MOP 2-07
Safety	Chemical Storage	HazComm – 29 CF 1910.1200	Tank Farm	EHS MOP 1-03
Safety	Material Handling	PITs – 29 CFR 1910.178	Process Tech	EHS MOP 1-19
Safety	Confined Space	Entry Permits – 29 CFR 1919.146	Tank Farm	EHS MOP-15

Establishing an Audit Program – Risk Based Approach

Planning
- Failure to set audit objectives or adequate schedule

Resources
- Insufficient time for audits, availability of auditors, availability of relevant auditees, inadequate training for program managers or auditors

Documented Information
- Information required from auditor, failure to protect and retain audit records

Monitoring and Measurement
- Ineffective monitoring of audit outcomes, not monitoring trends for future audit scopes

Audit Durations

# of Audits to Complete

Reporting Method

Relevant Standards and Regulations

Results of Previous Audits

Significant Changes

IT Availability

Concerns of Interested Parties

Establishing Extent of Audit Program

ISO 19011
Seven Principles

Integrity (the foundation of professionalism):

- Perform their work ethically, with honesty & responsibility;
- Only undertake audit activities if competent to do so;
- Perform their work in an impartial manner (fair and unbiased); and
- Be sensitive to any influences that may be exerted on their judgement while carrying out an audit.

Fair Presentation (the obligation to report truthfully & accurately):

- Audit findings, audit conclusions & audit reports reflect truthfully & accurately the audit activities.
- Significant obstacles encountered and unresolved diverging opinions are communicated.
- Communication is truthful, accurate, objective, timely, clear & complete.

ISO 19011
Seven Principles

Due Professional Care (the application of diligence and judgment in auditing):

- Exercise due care
- The ability to make reasoned judgments

Confidentiality   (security of information):

- Exercise discretion in the use and protection of information acquired in the course of their duties
- Audit information should not be used inappropriately for personal gain or in a manner detrimental to the legitimated interests of the auditee.
- Proper handling of sensitive or confidential information.

ISO 19011
Seven Principles

Independence The basis for impartiality of the audit and the objectivity of audit conclusions:

- Auditors should be independent of the activity being audited wherever practicable, and act in a manner that is free from bias and conflict of interest.
- Audit findings and conclusions are based only on audit evidence.

Evidence-based approach (the rational method for reaching reliable and reproducible audit conclusions in a systematic audit process):

- Audit evidence should be verifiable and general based on the samples of the information available.
- Appropriate use of sampling should be applied.

ISO 19011
Seven Principles

Risk-based approach (an approach that considers risks and opportunities):

- Risk-based approach should substantively influence the planning, conducting and reporting of audits in order to ensure that audits are focused on matters that are significant for the audit client and for achieving the audit program objectives.

Audit Planning

1. Audit Objectives

2. Availability and form of documented information

3. Functions and processes at the facility(s)

4. Audit Methods

5. Composition of the Audit Team

6. Contact details, locations, time frame and duration of the audit activities

7. Resources needed

8. Information to support interactions

| Area	Contacts	Scheduled Date	Auditor(s)	Sect. 4	Sect. 5	Sect. 6	Sect. 7	Sect. 8	Sect. 9	Sect. 10
Env		Oct 2022	TD, JV	X	X	X	X	X	X	X
Melt Shop		April 2022	JV, SV				X	X	X	
Hot Mill		June 2022	JV				X	X	X	
Cold Mill		November 2022	SV				X	X	X	
Long Products		January 2023	TD				X	X	X	
Utility		March 2023	SV				X	X	X	
Technical		May 2023	SV				X	X	X	
Support		May 2023	SV				X	X	X	
Admin		May 2023	SV				X	X	X	
Maint.		March 2023	SV				X	X	X	

Certification Period is 3 years – Need to audit each department and each section within three year period

Checklist vs No Checklist

Integrated Process Auditing
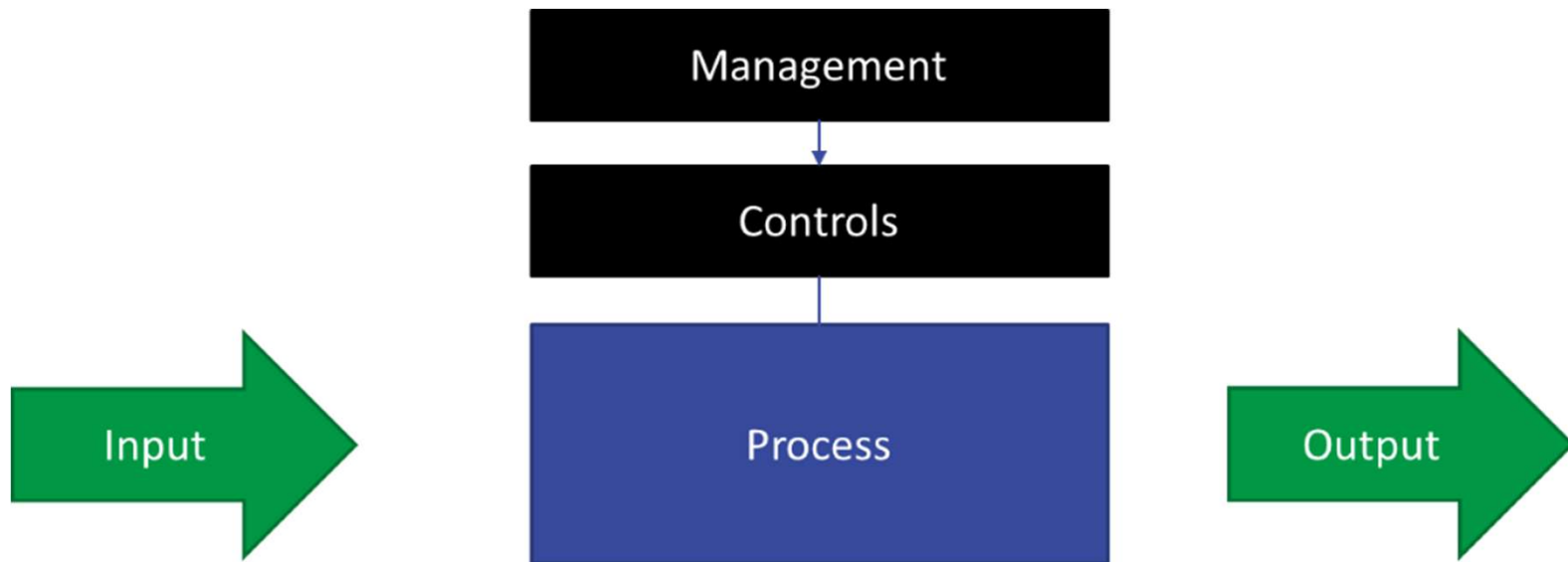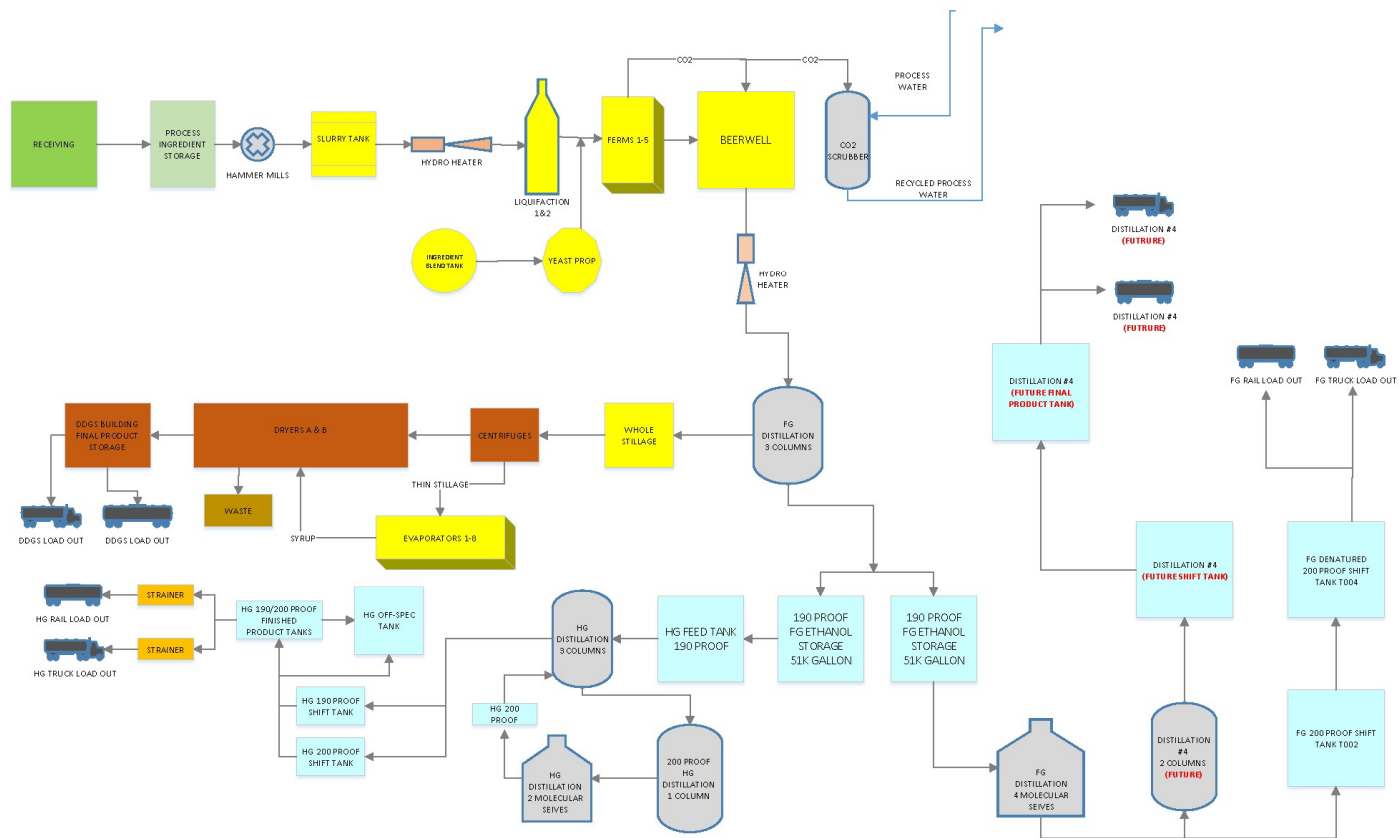
Tank Farm

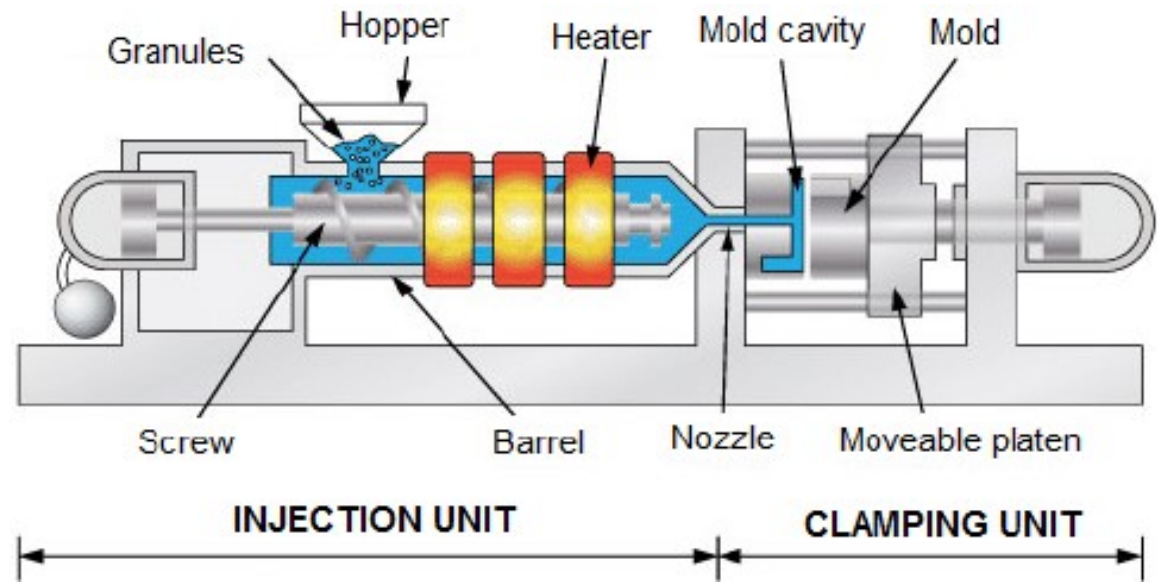| Topic	Ref:	Notes
Inputs		Raw Material, Final Product and Waste Material
Outputs		Air Emissions, RCRA Shipments, Used Oil Shipments
Aspect		Spill/Release Air Emissions Chemical Storage
Hazard		Slips, Trip or Fall Chemical Exposure Exposure to plant traffic Working at heights Confined Space
Energy		Pumps – electricity Lights

Tank Farm

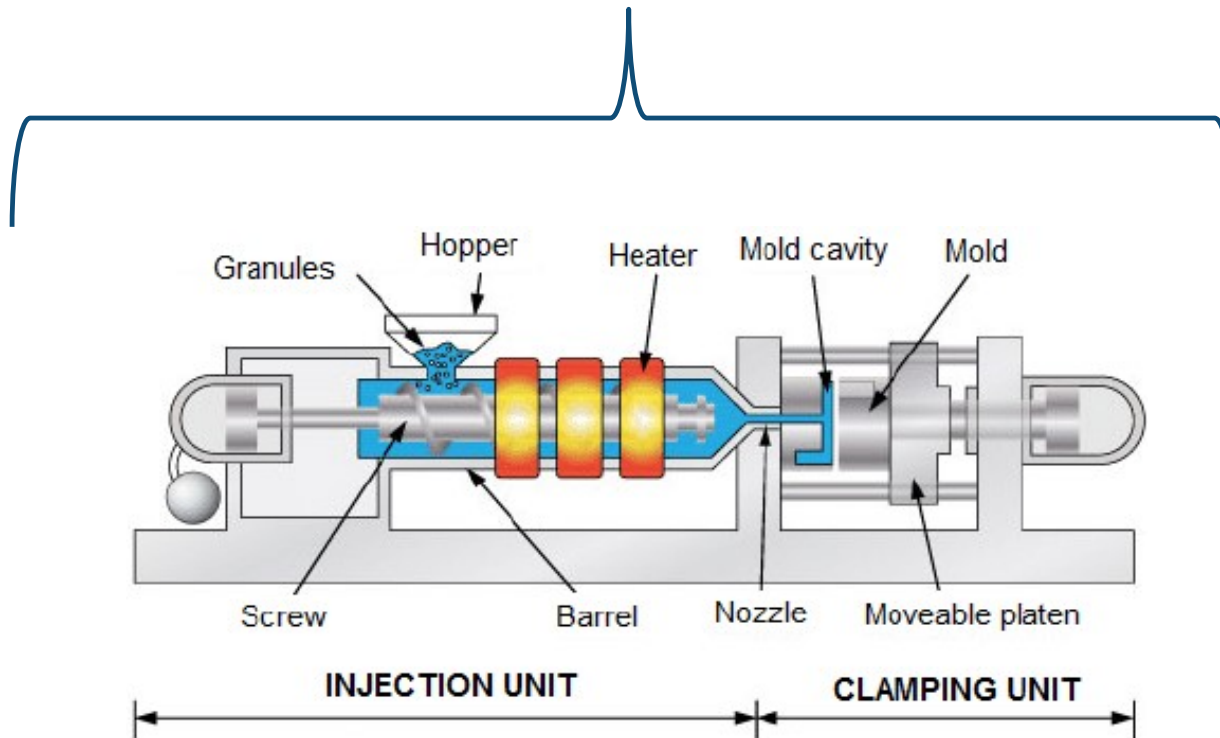| Topic	Ref:	Notes		
Controls		Contained and Covered Storage Area Maintained Equipment Liquid Level Monitors Spill Release Response Plan SOP Training	Platform with railing PPE Hazard Communication Eye Wash Station Confined Space SOP Training	Motion Lights
Monitoring (methods and results)		SPCC Inspections RCRA Inspections	Air Monitoring (Confined Space) Area Safety Inspections Eye Wash Station Inspections	
Competency		SPCC Training RCRA Training	HazComm Confined Space Monitoring	
Records		Training Records, Inspection Records, Confined Space Permits, ASIs,		

Injection Molding
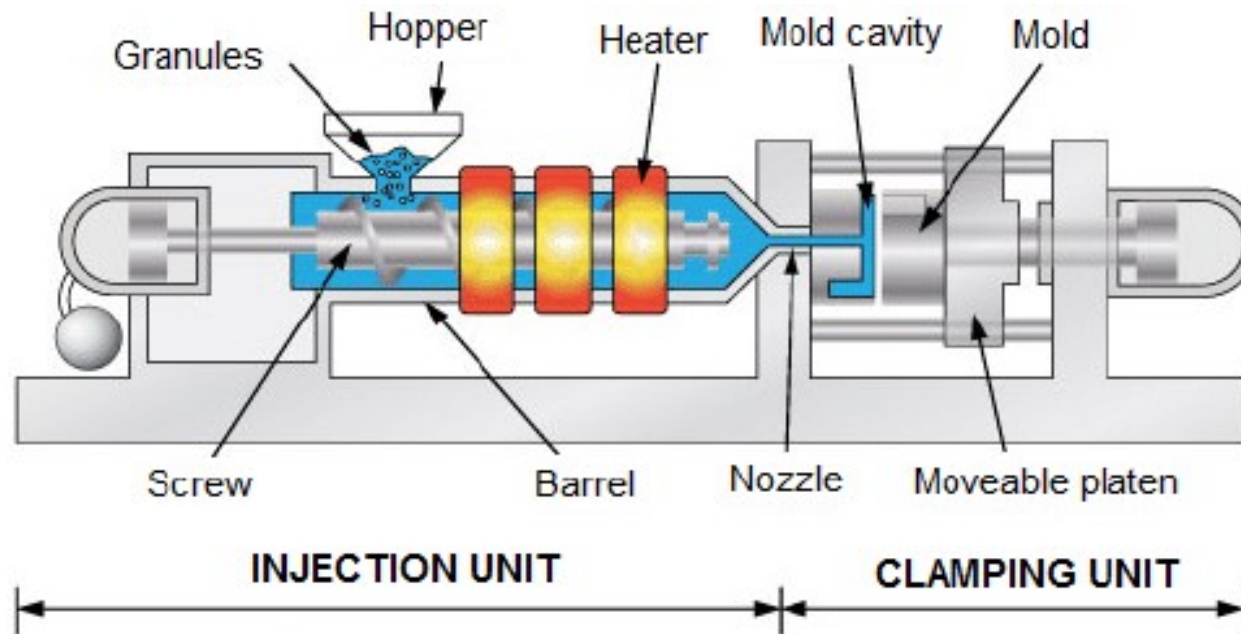
How do the Materials Get Here?

What is Generated?

Granules Hopper Heater Mold cavity Mold

Screw Barrel Nozzle Moveable platen

INJECTION UNIT CLAMPING UNIT

What Happens inbetween

Granules   Hopper   Heater   Mold cavity   Mold

Screw   Barrel   Nozzle   Moveable platen

INJECTION UNIT   **CLAMPING UNIT**

Monitoring Audit Program

The individual(s) managing the audit program should ensure the evaluation of:

- Whether schedules are being met and audit program objectives are being achieved;
- The performance of the audit team members
- Team leader and the technical experts;
- The ability of the audit teams to implement the audit plan;
- Feedback from audit clients, auditees, auditors, technical experts and other relevant parties;
- Sufficiency and adequacy of documented information to the whole audit process.

Monitoring Audit Program

Some factors can indicate the need to modify the audit program:

- Audit findings;
- Demonstrated level of auditee's management system effectiveness and maturity;
- Effectiveness of the audit program;
- Audit scope or audit program scope;
- The auditee's management system;
- Standards and other requirements to which the organization is committed;
- External providers;
- Identified conflicts of interest;
- The audit client's requirements.

Reviewing and Improving the Audit Program

The program managers should assess the audit program and if the objectives have been achieved.

Lessons learned from the audit program review should be used as inputs for the improvement of the program.

Reviewing and Improving the Audit Program

The audit program review should consider the following:

- Results and trends from audit program monitoring;
- Conformity with audit program processes and relevant documented information;
- Evolving needs and expectations of relevant interested parties;
- Audit program records;
- Alternative or new auditing methods;
- Alternate or new methods to evaluate auditors;
- Effectiveness of the actions to address the **RISKS AND OPPORTUNITIES**, and internal/external issues;
- Confidentiality and information security issues relating to the audit program.

Thank you

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Anthony DeMarco graduated the University of Manchester in 2012 and achieved his MBA from DePaul University in 2014. In 2010 while at Manchester Anthony began his career at BCA as an intern to ultimately become Vice President and part owner of BCA Environmental Consultants in 2016. As it relates to auditing and management systems Mr. DeMarco has implemented, managed programs, and audited multiple steel mills, chemical manufacturers, and a diverse group of automotive suppliers. This includes work across the United States and internationally, with a focus on Spanish speaking countries.