



## 3.0 Operations And Activities of Significant Impact

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- 3.8 OPERATIONS AND ACTIVITIES COMPLETION CHECKLIST





## 3.1 Procedures For Controlling Significant Impacts

### Keys



**Identify operations and activities that have significant environmental impact and have procedures in place. [R 324.1505 (2)(b)(iv)]**

**Procedures and work instructions are also used to:**

- **Control operations,**
- **Maintain or improve compliance,**
- **Maintain consistency, and**
- **Maintain or increase efficiency.**

In the previous section, you should have identified the significant environmental impacts for your facility. Now, you need to look at the operations and activities that produce the significant impacts and develop procedures/work instructions to manage these operations. Procedures/work instructions also can be developed for activities and operations that did not produce significant impacts, if you feel they could be managed more effectively using an EMS.

Your procedures for operations and activities that have significant impacts should include the following four components:

1. Monitoring of operations and activities.
2. Assurance that the operations and activities remain within acceptable parameters.
3. Include provisions to implement prompt correction if a deviation occurs.
4. Systematically review records and report on environmentally related actions relative to the operations and activities.

Procedures/work instructions for operations and activities are best written by the people or department that oversees the operation. But because these procedures are part of an environmental management system, they also must be reviewed by the person in charge of environmental compliance to determine that all monitoring and operations are meeting permit or regulatory requirements. Corrective action needs to meet the overall requirements of the facility system, and all records and reporting must match standardized procedures for your facility. A procedure review system that encompasses these considerations needs to be developed so that all procedures meet the predetermined requirements of the EMS.





## 3.2 Identify Operations and Activities

### Keys



**This table of operations and activities with EMS procedures also can serve as a reference document for your system.**

#### Identify Operations:

- Monitor
- Control
- Correct
- Review

List or tabulate those operations and activities for which you are going to develop procedures or work instructions under the EMS. (Again, refer to your previous listing of operations and activities that produce significant impacts.) Include in this table any procedures or work instructions that are currently in place, such as:

- any facility standard operating procedures (SOPs),
- monitoring plans,
- work instructions,
- quality program requirements,
- preventative maintenance programs,
- environmental requirements, or
- regulatory requirements.

(Many of these requirements have been identified in Section 2.)

You will want to use practices that are already in place and build on them for your procedures. Procedures can be developed for individual operations or group similar operations/activities because they all contribute to a significant impact. For instance, handling of oil and used oil may occur in many departments/ areas of a facility, but a consistent facility-wide handling procedure should be developed to monitor, control and correct.

Assign a department or person responsible for the operation/ activity for which the procedures are being developed. These people or departments also should be responsible for the development of the work instructions and for their implementation.

On the following page is an example Operations and Activities Table for Joseph's Forklift and Hauling Company. A blank table (Form 3.1) is provided for your use or you can create your own documentation table/system.



## EXAMPLE 3.1

# Joseph's Forklift and Hauling Company

### Operations and Activities Procedure Listing

<u>Activity/Product/ Service</u>	<u>Aspects</u>	<u>Impacts</u>	<u>Significant Impact</u>	<u>Procedures Currently in Place</u>	<u>EMS Proc. No.</u>	<u>Responsible Department</u>
Deliveries	Consumption of diesel and propane	Depletes natural resources and raw materials	Y	PM	1	Operations
	Air emissions from diesel trucks	Degrades air quality	Y	PM	1	Operations
	Air emissions from forklifts	Degrades air quality	Y	PM	1	Operations
	Potential for spills from unloading and transfer operations	Contamination of storm water	Y	SWPPP, SPCC / PIPP, employee training	2	Administration / Operations
Warehouse Operations	Generation of waste paper and packing/packaging	Depletes natural resources	Y		3	Administration
	Electrical use	Depletes natural resources	Y		4	Operations
	Potential for spills from transfer operations	Contamination of storm water	Y	SWPPP, SPCC / PIPP, employee training	2	Administration / Operations
	Sanitary waste	No control – assuming no hazardous materials are dumped down facility drains	N	SWPPP, SPCC / PIPP, employee training	2	Administration / Operations
Shipping	Consumption of paper, packing/packaging and pellets	Depletes natural resources and raw materials	Y		3	Administration
	Air emissions from forklifts	Degrades air quality	Y	PM	1	Operations
	Potential for spills from loading and transfer operations	Contamination of storm water	Y	SWPPP, SPCC / PIPP, employee training	2	Administration / Operations
Boiler	Consumption of #2 Fuel Oil	Depletes natural resources and raw materials	Y	Tracking of #2 fuel use	5	Operations
	Potential for spills during filling of #2 Fuel Oil AST	Contamination of soil and groundwater/storm water	Y	SWPPP, SPCC / PIPP, employee and subcontractor training	6	Administration / Operations

Date: August 15, 1999

Approved by: Cfris Joseph

## EXAMPLE 3.1

### Joseph's Forklift and Hauling Company

#### Operations and Activities Procedure Listing

<u>Activity/Product/Service</u>	<u>Aspects</u>	<u>Impacts</u>	<u>Significant Impact</u>	<u>Procedures Currently in Place</u>	<u>EIMS Proc. No.</u>	<u>Responsible Department</u>
	Air emissions of CO, CO <sub>2</sub> , NO <sub>x</sub> , SO <sub>2</sub> , particulate	Degrades air quality	Y	Stack test (3 yr.), PM, start-up and shutdown SOPs, employee training	7	Operations
	Water discharges	Adds load to City POTW	Y	PM, employee training	8	Operations
	Water treatment chemicals – use and potential for spills	Depletes natural resources and raw materials and potential contamination of water discharges	Y	SWPPP, SPCC / PIPP, employee training, maintain MSDSs for all chemicals	8	Operations
Maintenance (vehicle and facility)	Release of vapors and potential for spills during vehicle refueling	Degradation of air quality and potential contamination of storm water	Y	SWPPP, SPCC / PIPP, employee training, PM on tank devices	9	Operations / Administration
	Potential for leaks from UST	Contamination of soil and groundwater/storm water	Y	PM on leak detection system	9	Operations
	Use of paint and solvents	Depletes natural resources and raw materials and VOC emissions contribute to degradation of air quality	Y	Maintain MSDSs on all chemicals	10	Operations
	Use of oils and potential for oil spills	Depletes natural resources and raw materials and contamination of soil and groundwater/storm water	Y	SWPPP, SPCC / PIPP, maintain MSDSs for all chemicals, maintain and track waste manifests	11	Operations / Administration

PM – Preventative Maintenance System  
 SPCC / PIPP – Spill Pollution Control and Countermeasure / Pollution Incident  
 Prevention Plan

SWPPP – Storm Water Pollution Prevention Plan  
 SOPs – Standard Operating Procedures

Date: August 15, 1999

Approved by: Cfris Joseph

# FORM 3.1

## EMS Operations and Activities Procedures Listing

Company: \_\_\_\_\_

Date: \_\_\_\_\_

<u>Activity/Product/ Service</u>	<u>Aspects</u>	<u>Impacts</u>	<u>Significant Impact</u>	<u>Procedures Currently in Place</u>	<u>EMS Proc. No.</u>	<u>Responsible Department</u>

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_



## 3.3 Monitoring of Activities and Operations

### Keys



**Monitor the operations and activities.**

**[R 324.1505(2)(b)(iv) (A)]**

**Make sure that monitoring procedures are in place to measure whether you have reached your targets.**

**Develop monitoring forms or checklists as part of your procedures or work instructions.**

Monitoring of activities and operations is done for two reasons:

1. Process control
2. Environmental requirements

#### Process Control

Monitoring for process control keeps equipment operating as designed, identifies when maintenance is necessary, helps identify waste in the process, and allows development of process efficiency. This all leads to lower costs and better products.

#### Environmental Requirements

Monitoring for environmental requirements may never give you a better product, but it is the price of doing business. If the catalytic oxidizer on your coating line is not operating efficiently, it does not affect your product coating, but all your neighbors could be complaining due to odors from emissions. If you emit more, you pay more to the regulatory agencies. In some cases, upsets shown by monitoring for environmental requirements identify process problems that would not normally be found.

A few examples of monitoring include:

- boiler temperature
- air emissions testing
- conductivity of boiler feed water
- storm water sampling
- amperage on pumps
- inspections of waste storage areas

The procedures you write for monitoring need to include these two components. If you have a “quality system,” you may already have procedures for quality control in place. Some of these may be useful. But, look at the monitoring you currently do (if any) for each operation and activity. List and determine if they are sufficient for your EMS system. You have identified a significant impact as a result of these operations and activities.

***Will your monitoring activities allow you to evaluate the impact on the environment? Will they also help you attain your EMS target or goal?***







## 3.4 Acceptable Parameters and Corrective Action for Operations and Activities

### Keys



**Assure that the operations and activities remain within acceptable parameters.**

**[R 324.1505(2)(b)(iv) (B)]**

**Include provisions to implement prompt correction if a deviation occurs.**

**[R 324.1505(2)(b)(iv) (C)]**

#### **Acceptable Parameters:**

The acceptable parameters for your operations and activities have to be defined. Parameters are determined by the requirements set by your EMS (designated target), process/product control, equipment design, and environmental regulations/permits. As part of the procedure developed and the work instructions, the acceptable parameters must be documented so that the employees performing the monitoring of activities know when they have a situation that requires corrective action, or in other words, a noncompliance. Acceptable parameters may include a temperature range for equipment or permit limits that require water discharges to be at a specified pH.

#### **Corrective Action:**

Corrective action is triggered when deviations from acceptable parameters are detected. Prompt correction is required by the C3 EMS, and in most cases, deviations mean a process is out of control or an environmental requirement may be violated. Prompt correction is in your best interest from the business standpoint. Corrective action could be triggered when:

- An operating range for equipment is exceeded,
- A permit limit is violated, or
- A specified procedure is not completed.

The corrective action taken must be documented as part of the EMS. Procedures for corrective action of deviations from acceptable parameters must be defined (if possible) and comply with the reporting and recordkeeping necessary for the EMS. All employees should be trained in at least the following corrective action requirements for operations and activities:

- Notification to the supervisor or manager,
- Correction of the deviation, and
- Documentation of the deviation and corrective action taken.





## 3.5 Records and Reporting System for Operations and Activities

### Keys



**Systematically review records and report on environmentally related actions relative to the operations and activities.**

**[R 324.1505(2)(b)(iv) (D)]**

**Tracking records and reports is necessary to determine whether your objectives and targets are being met.**

**A weekly or monthly report could be generated by each department to review and communicate the environmental status of operations and activities.**

Records and reporting for monitoring and corrective action of deviations must be documented in a standard system for the EMS. They can be kept with the department originating the record or in a central filing location. The records necessary for the operations and activities need to be defined in the procedures.

A method for reviewing and tracking results must be clearly outlined. Depending on the type of records and reports, supervisors and department heads may be put in charge of reviewing. Or, with some of the environmental records, the person most familiar with the necessary reporting (such as the environmental manager) may be necessary for a compliance review. Be consistent in how you handle your records, track results, and communicate the requirements to the employees that perform operations/activities controlled by the EMS. Section 4 of this manual goes into greater detail on records and recordkeeping.





## 3.6 Operations and Activities Procedure

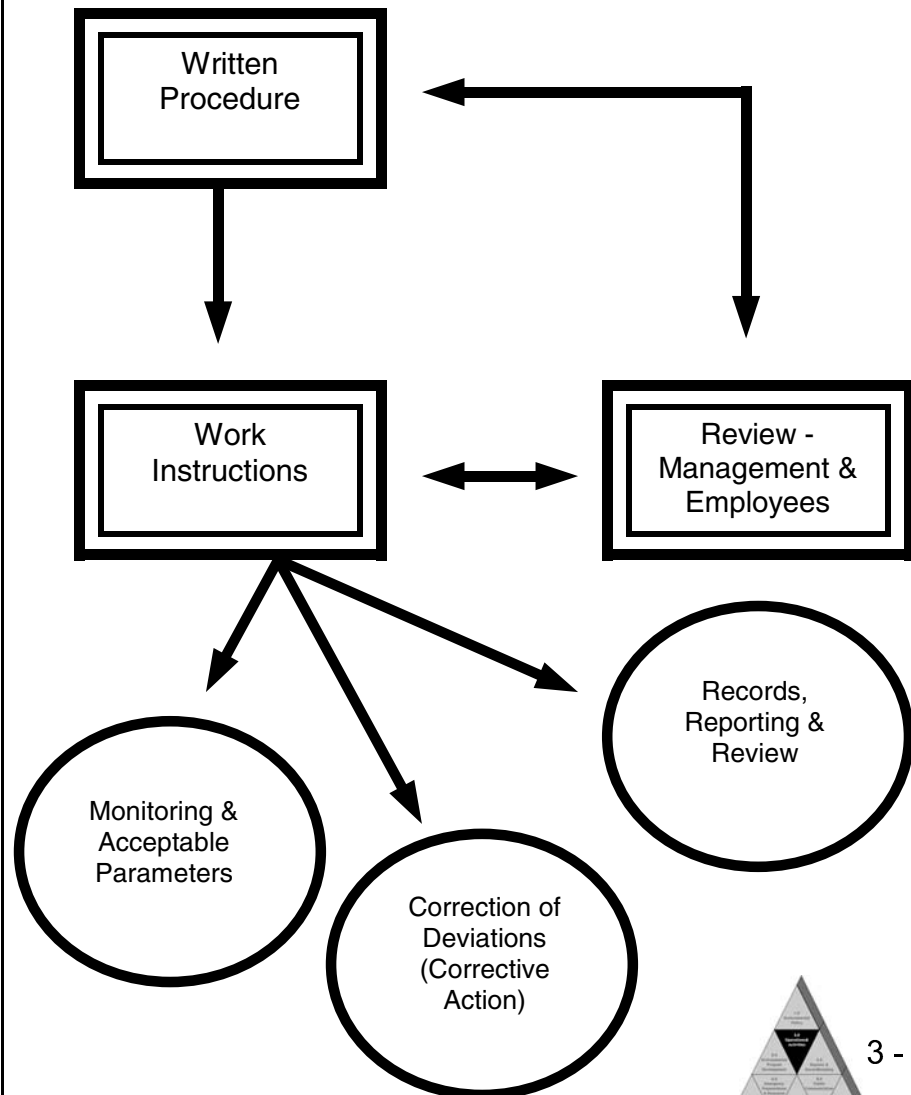
Keys



**Training may be necessary for new work instructions.**

Develop procedures for operations and activities of significant impact. From these procedures, work instructions can be developed. Or, in some cases the procedure itself may be all that is necessary for the work instruction. (This would work if one employee is doing everything from monitoring to reporting.) Work instructions can be developed for specific jobs or for specific employees. It depends on how you want to implement your procedures. Procedures without implementation are just wasted paper and time. An example procedure and work instructions have been developed on the following pages.

Procedures and work instructions should be reviewed prior to implementation for conformance to the EMS requirements and should be reviewed with the employees who are going to implement them. Below is a flow chart depicting the process:



## EXAMPLE 3.2

### Joseph's Forklift and Hauling Company

#### EMS Procedure No. 4 Operations and Activities – Warehouse Operations Electrical Use

##### I. Purpose

This procedure is to establish and maintain operating standards for electrical use within the Warehouse Operation for Joseph's Forklift and Hauling Company. This is an operation that has been identified as having a significant impact.

##### II. Scope

This procedure will be used to monitor, control, correct, and review electrical use within the Warehouse.

##### III. Definitions

**Monitoring** – measurements or samples collected at a specified interval.

**Acceptable parameters** – a parameter or range of parameters that has been predetermined to be the target operating range for an operation.

**Corrective action** – action taken to correct a deviation from an acceptable parameter.

##### IV. Procedures

Lighting – Lighting shall be operated on a timer system. Lights will be set to turn on at the start of business and turn off at the close of business.

Electric Powered Conveyors – conveyors will be turned off when not in use. Conveyors will be turned on when 10 or more packages are stockpiled to be moved into or out of the warehouse.

Electrical use shall be measured daily and logged on the EMS Electrical Use Form No. 4-1.

Deviations from operation parameters shall be noted on the electrical log. Deviations include leaving conveyors running continuously and timer failure on the lighting system. All corrective action taken to correct a deviation shall be logged on the EMS Corrective Action Form No. 8-1.

V. **Records**

Monitoring reports and corrective action reports generated as a result of this procedure will be kept on file with the originating department.

A monthly EMS status report will be generated based upon the records review and to report on the environmental status of this operation/activity.

VI. **Updates and Reviews**

This procedure will be reviewed and updated annually, or upon the addition/modification of an activity, product or service.

Any work instructions created for this procedure will be reviewed and updated annually, or upon the addition/modification of an activity, product or service.

VII. **Responsibilities**

The Operations/Shipping/Warehouse Manager will be responsible for this procedure and its implementation.

Final review and approval of this procedure will be made by facility management and the EMS Manager (e.g., President, Operations/Shipping/Warehouse Manager). Management will sign off on all approved procedures.

VIII. **Related Documentation**

A listing of approved objectives and targets will be documented and maintained on file by the EMS manager and made available to all employees.

A listing of EMS procedures will be maintained on file by the EMS manager.

Work instructions generated as part of the procedure include:

1. Work Instruction No. 4-1 – Electrical Use

**Written by:** Vince Roy

**Date:** August 27, 1999

**Reviewed by:** Chris Joseph

**Date:** August 30, 1999

**Issue Date:** 8-30-99

Version #: 1



EXAMPLE 3.3

**Joseph's Forklift and Hauling Company**

**Work Instruction No. 4-1  
Warehouse Operations- Electrical Use**

**Job Title:** Forklift driver/ Warehouse operator

1. Check lighting timer once per month to assure operation.
2. Operate conveyor- turn on conveyor when more than 10 packages are to be moved into or out of the warehouse. Note on electrical use log if conveyor is left on during the operating day or overnight.
3. At the close of business, note on the electrical use log the kilowatt hours used during the day from the meter by the lighting timer.

**Work Instruction Reviewed by Employee:** Joe Crane

**Date:** 9/1/99

**Supervisor:** Vince Roy

**Date:** 9/1/99

EXAMPLE 3.4

**Joseph's Forklift and Hauling Company**

**Work Instruction No. 11-1  
Maintenance- Oil Change**

**Job Title:** Maintenance operator

1. All service work is to be done in the garage under cover.
2. Oil from the vehicle is to be drained into a competent oil pan.
3. Used oil is to be transferred into the appropriately labeled used oil container.
4. The used oil filter is to be disposed of in the appropriately labeled used oil filter container.
5. Any drips or leakages that occur during the oil change or transfer are to be immediately cleaned up using absorbent.
6. Any oil spills over five gallons immediately trigger corrective action as specified in the SPCC.
7. All corrective action must be logged in the EMS Corrective Action Log No. 8-1.
8. Record service in maintenance log (i.e., vehicle #, volume of oil, date, time).

**Work Instruction Reviewed by Employee:** Lester Simons      **Date:** 9/1/99

**Supervisor:** Ella Gray      **Date:** 9/1/99





## 3.7 EMS Procedure for Operations and Activities

### Keys



**As you implement targets, procedures and work instructions may change or need to be updated.**

A general process/format for writing procedures for operations and activities should be developed for your EMS. Although this may seem redundant, every procedure that is written for the EMS must conform to the guidelines you develop for your system. When impacts and targets are reviewed and developed for your facility, new procedures may be necessary for new operations and activities.

All written procedures for development and implementation of your EMS should be kept in a central location. They can be kept in manual form or in an electronic copy for people to access when necessary. It depends on what works best for your facility. A small company with a limited number of computers may find that the paper copy works best and a larger company may find the electronic copy works best.

On the following page is a procedure for writing procedures for Joseph's Forklift and Hauling Company's EMS. Review this example and develop your procedure for your system documentation.



## EXAMPLE 3.5

### Joseph's Forklift and Hauling Company

#### EMS Procedure No. EMS-2 Requirements for Written Procedures for Operations and Activities of Significant Impact

##### I. Purpose

This procedure is to be established and maintain the content of procedures written for operations and activities of significant impact for Joseph's Forklift and Hauling Company.

##### II. Scope

All procedures for operations and activities shall contain provisions to monitor, control, correct, and review operations and activities of significant impact.

##### III. Definitions

**Monitoring** - measurements or samples collected at a specified interval.

**Acceptable parameters** - a parameter or range of parameters that has been predetermined to be the target operating range for an operation.

**Corrective action** - action taken to correct a deviation from an acceptable parameter.

##### IV. Procedures

Monitoring plans shall be capable of measuring and defining the significant impact to determine if targets have been met. Necessary monitoring forms shall be generated or referenced as part of the procedure.

Acceptable parameters shall be defined per operation/activity to maintain control of the process and minimize impact.

Corrective action shall be taken on deviations from acceptable parameters and defined if possible in the procedure. Corrective action shall be noted on an EMS Corrective Action Form No. 8-1.

##### V. Records

Monitoring reports and corrective action reports generated as a result of procedures will be kept on file with the originating department.

A monthly EMS status reports will be generated based upon a records review and to report on the environmental status of the operation/activity.

**VI. Updates and Reviews**

Procedures will be reviewed and updated annually, or upon the addition/modification of an activity, product or service.

Work instructions created for procedures will be reviewed and updated annually, or upon the addition/modification of an activity, product or service.

**VII. Responsibilities**

The Manager of the operation/activities will be responsible for generating and implementing the procedure, and for generating and implementing any work instructions.

First review and approval of procedures will be made by facility management and the EMS Manager (e.g., President, Operations/Shipping/Warehouse Manager). Management will sign off on all approved procedures.

**VIII. Related Documentation**

A listing of approved objectives and targets will be documented and maintained on file by the EMS manager and made available to all employees.

A listing of EMS procedures will be maintained on file by the EMS manager.

Work instructions generated as part of procedures will be listed.

**Written by:** Jill Jones

**Date:** August 26, 1999

**Reviewed by:** Chris Joseph

**Date:** August 30, 1999

**Issue Date:** 8-30-99

**Version#: 1**



## 3.8 Operations and Activities Completion Checklist

### Check Box

- 1. Have you identified operations and activities that need procedures?
- 2. Have you developed procedures that monitor, control, and correct?
- 3. Have you reviewed your procedures with the necessary people?
- 4. Do your procedures monitor whether you have reached your targets to support your Environmental Policy?
- 5. Have you documented or written a procedure for the development of EMS Procedures?

