

Identification and evaluation of environmental aspects

1.0 Purpose

This procedure defines the mechanism for the identification and evaluation of environmental aspects of the operations of KSPH&IDCL in order to determine those aspects that have actual or potential significant impacts upon the environment.

2.0 Activities affected

All areas and departments

3.0 Associated and reference documents

- 1) IMSP 20 – Legal and other requirements
- 2) IMSP 22 – Emergency preparedness and response
- 3) IMSP 23 – Monitoring and measurement of environmental operational controls
- 4) ISO 14001:2004, Elements 4.3.1
- 5) IMS Manual section 4.3.1

4.0 Definitions

Environment: Surroundings in which an organization operates including air, water, land, natural resources, flora, fauna, humans, and their interrelation.

Environmental Aspect: element of an organization's activities or products or services that can interact with the environment.

Environmental Impact: Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects.

5.0 Procedure

5.1 Planning for identification of environmental aspects

A Cross Functional Team (CFT) led by the Management Representative shall identify environmental aspects of operations that can be controlled or influenced. Where appropriate, MR may form a smaller CFT to do this activity for a specific activity, or product, or service. MR shall ensure that all the members of CFT are aware of, and, are sufficiently trained to conduct study to identify the environmental aspects and impacts.

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The Cross Functional Team shall include representation from all appropriate functional areas and departments.

The environmental aspects and significant aspects associated with the operations of on-site contractors are to be covered by this procedure.

EXAMPLES OF ASPECTS WHICH CAN BE CONTROLLED BY THE ORGANISATION.	EXAMPLES OF ASPECTS WHICH CAN BE INFLUENCED BY THE ORGANISATION.
1. Products / Activities / Services directly under the control of the Organization. Example: Product Design carried out by the Organization.	1. Aspects which are not under the direct control of the Organization. Example: <ul style="list-style-type: none"> • Activities carried out by Subcontractors. • Goods and services supplied by somebody else and used by the Organization. • Goods supplied by the Organization (limited control over the use and disposal of Products).

6.2 Identification of environmental aspects

6.2.1 **CFT** shall follow the below mentioned steps to identify the environmental aspects related to an activity or a product or service. A list of aspects and impacts is provided in the enclosed Appendix A for guidance.

6.2.2 List-down all the activities, services and product those are to be covered under the study for identification of environmental aspects.

6.2.3 The identification of environmental aspects and impacts shall be done by one or more of the following:

- Discussion / Interviews with concerned people in the area.
- Site visit and studying the activities.
- Reference of data sheets / manuals.

6.2.4 While identifying environmental aspects and associated impacts, the following conditions should be considered:

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- a) Abnormal (A) Start up, shut down or break down conditions.
- b) Emergency (E) Foreseeable/emergency condition.
- c) Normal (N) Conditions that are normal other than specified above

6.2.5 Follow the logical sequence of a selected activity or service or product.

6.2.6 Study and consolidate details for a selected activity or service or product

6.2.7 During identification of environmental aspects, the following shall be considered:

- a) Emissions to air
- b) Releases to water.
- c) Land contamination/spillage.
- d) Generation and emission of green house gases.
- e) Usage of Ozone depleting substances.
- f) Use of raw materials and natural resources
- g) Waste Management including disposal of waste.
- h) Energy emitted (such as Sound, heat, radiation, vibration etc).

Potential for accidents and emergency situations: This categorization assists in fulfilling the requirement imposed by clause 4.4.7, Emergency preparedness and response.

Actual impacts: This consolidates the total array of impacts by treating multiple examples of the same impact. Individual evaluations might conclude that solid waste is not significant. However, when the 10 small amounts are considered as one total amount of 200 kgs /week), the solid waste evaluation can result in a score that defines it as a significant impact.

6.3 Evaluation criteria for impacts

6.3.1 Once environmental impacts are identified, each must be evaluated to establish the magnitude of the impact. This evaluation becomes the basis for determining significance. Following evaluating criteria shall be used for **normal and abnormal** conditions. (See Appendix B for details of definitions of operational conditions)

6.3.2 While evaluating environmental impacts, Environmental aspects that are associated with Legislative concern, interested party concern and business concern and potential emergency situation are considered as Significant Environmental Aspects.

Note: Quantitative risk assessment may not be necessary for such cases.

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- LC – Legislative Concern: The impact addressed by applicable legal requirements (Aspects / activities covered by Permits, Consents, Regulatory guidelines)
- IPC – Interested Party Concern: The impact/potential concern expressed by Employees, Neighbors, local residents with respect to environmental performance of the Organization.
- BC – Business Concerns impacting the opportunity for resource conservation/waste reduction or situations which are likely to result in potential emergency situations.

6.3.3 Quantitative Assessment of significance:

The environmental impacts which do not fall under any of the categories defined in 6.3.2 are then evaluated with “SSPD” quantitative analysis as given below:

- a) ‘S’ → Scale – It is the extent/area of environmental impact rated on a scale 1 to 4
- b) ‘S’ → Severity – It is the degree of impact (damage) on environment rated on a scale 1 to 4
- c) ‘P’ → Probability – It shows the probability of occurrence of an impact rated on a scale 1 to 4
- d) ‘D’ → Duration – It shows the duration for which the impact will last rated on a scale 1 to 4.

6.3.3.1 Quantitative Assessment is carried out as follows:

Significance Score = Scale x Severity x Probability x Duration of Impact.
Significance of an aspect increases with increasing score

If the Significance Score ≥ 18 , such environmental aspects shall be considered as significant aspects.

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SCALE	Score
Impact is contained within the work station / work area (Isolated)	1
Impact is restricted to / contained within the site of activity / plant premises (Confined)	2
Impact migrates outside the site of activity into local community (Regional) but is confined to the immediate neighborhood	3
Impact migrates outside the region in which the worksite is located (Global)	4

SEVERITY	Score
Harmless / Mild Impact - Little or no potential for harm	1
Moderate – Slightly harmful	2
Serious – Harmful, but not potentially fatal to plants / living beings	3
Severe / Catastrophic – Very harmful and/or Potentially fatal	4

FREQUENCY (Probability of occurrence)	Score
Seldom – May occur just once or may not occur at all in one's work life span	1
Intermittent - Occurs at least once every year, but not more than 2 times in a year	2
Regular / Repeated – Occurs at least once every month or more frequently, but less than 15 times in a month	3
Routine / Continuous – Daily / Continuous / about 15 times in a month	4

DURATION	Score
Short term Impact - Impact can be corrected within the same day / within a week.	1
Medium term impact - Impact can be corrected in about 3 – 12 months; Impact correctable	2
Long term impact – Impact difficult to correct; may take between 1 to 3 years for rectification	3
Irreversible Impact – Controllable but not correctable; rectification may take more than 3 years	4

6.4 Mention the reference of Control procedure Number / reference of Environmental Management Program in the list of Aspects and impacts.

6.5 **Frequency of reviewing Aspect impact Register:** CFT in concurrence with MR shall review the Aspect impact register by considering any change in process etc. so that all

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aspects with their impacts are addressed, Such review will be carried out at least once in every year

Appendix – A

ASPECT- IMPACT IDENTIFICATION GUIDELINES

Aspects:

- Generation of stack emissions
- Generation of fugitive emissions (including dust)
- Discharge of waste water (mention type of waste water)
- Generation and disposal of solid waste (mention type of solid waste)
- Generation and disposal of sludge (mention type of sludge)
- Generation of odour
- Generation of heat
- Generation of noise
- Generation and disposal of waste oil
- Leakage of oil, solvent, chemicals etc
- Spillage, including overflow
- Consumption of power
- Consumption of raw materials and consumables
- Consumption of water
- Fire accident, explosion, vibration;
- Visual impact

Impacts:

- Air / water / land pollution
- Resource depletion: Use of natural and manufactured resources (including land, water, power, fuels, energy, chemicals etc)
- Health Hazard
- Ozone depletion
- Global warming
- Visual pollution
- Disturbance to fauna habitat
- Loss of / damage to biodiversity
- Visual pollution
- Damage to historical monuments, heritage sites

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APPENDIX –B

Operational conditions:

Normal:

- Under normal operations
- Activities during Start up, shutdown

Abnormal:

- Deviation from normal operating parameters
- Spillages, leakages

Emergency:

- Large overflow with severe impact
- Fire / explosion
- Failure of pollution control equipment
- Continuously exceeding legal limits for discharge/emissions
- Large contamination to Storm water drains with potential for public complaints

7.0 Records

Sl. No	Name of the Record	Authorizing Personnel	Custodian of record	Retention Time
1	Aspect-Impact Register	M.R	M.R	Till the issue of next revised documents

Approved by : Managing Director