



Consolidated Construction Consortium Ltd.

PROCEDURE NO. : **CSP- 4.3.1**

**PROCEDURE FOR IDENTIFICATION OF
ENVIRONMENTAL ASPECTS, HAZARDS,
EVALUATION OF IMPACTS, RISKS AND
DETERMINATION OF CONTROL MEASURES**

REV.NO. 0

DATE: 02-09-2011

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**PROCEDURE FOR IDENTIFICATION OF ENVIRONMENTAL ASPECTS,
HAZARDS, EVALUATION OF IMPACTS, RISKS AND DETERMINATION OF
CONTROL MEASURES**

0	02-09-2011	First Issue

REV. NO.

DATE

BRIEF RECORD OF REVISIONS

PREPARED BY : HEAD - HSE

SIGNATURE

NAME

: S N NARAYANAN

APPROVED BY : DIRECTOR (OPERATIONS)

SIGNATURE

NAME

: V G JANARTHANAM



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1.0 OBJECTIVE

To identify the environmental aspects and hazards of all activities carried out by CCCL and assess the significant impact on environment, risk on the work activity and to adopt suitable control measures.

2.0 SCOPE

This procedure covers all activities performed at project sites and offices.

3.0 RESPONSIBILITY

3.1 Head - HSE is overall responsible for implementing this procedure.

3.2 PC/PM/SE are responsible for identifying the activities with significant impacts and risks before starting new project and prepares operational control procedures.

4.0 PROCEDURE

4.1 Initial Review

4.1.1 PC/PM/SE to carry out Initial environmental review and assessment of risks to establish the present organization level with respect to environment and occupational Health and safety.

4.1.2 The initial review covers the following.

- Status of compliance with applicable legislative and regulatory requirements.
- Concerns of all interested parties.
- Identification of environmental aspects and hazards of its activities, products & services during normal, abnormal and emergency situations, to determine those aspects that have or can have significant environmental impacts and Major Risk.
- Evaluation of performance of existing environmental management, occupational Health and safety practices and procedures.
- Feed back from the previous incident of nonconformity.



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4.2 Identification of Aspects

4.2.1 For Identification of aspects and impacts, the following steps are to be followed.

- a) Select an activity, product or service. The selected activity, product or service should be large enough for meaningful examination and small enough to be sufficiently understood.
- b) Identify as many environmental aspects as possible associated with the selected activity, product or service.
- c) Identify as many actual and potential, positive and negative, environmental impacts as possible with each identified aspect.

4.3 Evaluation of Significant Impacts

4.3.1 The evaluation of the significant impacts from the identified aspects and impacts is to be carried out by considering the following.

- a) Legal concern (LC)

Any of the impacts covered by existing applicable environmental regulations of the State, Central Governments in India or the country in which the project is executed and shall be considered significant.

- b) Interested Party Concern (IPC)

To consider the feedback on Environmental Performance from interested parties viz. a) Employees b) Visitors c) Sub contractor and his workmen. d) Vendors/Suppliers.

The Core Team through Head - HSE will decide the significance based on assessment.

- c) Resource Conservation Potential (RCP)

Any Environmental aspects having Resource Conservation Potential or Resource Saving Potential worth > Rs. 25,000/year will be rated as significant.

4.3.2 All impacts having potential emergency situations shall be identified as significant.

4.3.3 The evaluation criteria using QSPD shall be done for those impacts, which are not identified as significant under LC, IPC and RCP.



4.3.4 Environmental impact is measured through QSPD criteria as detailed below, (Refer Format No. : **CSF-002A**)

Q	Quantum	Area of impact
S	Severity	Degree of damage
P	Probability	Probability of occurrence of the impact
D	Duration	Duration

4.3.5 The QSPD criteria for evaluation is as per Table-1.

Aspect calculation is done as per the following.

Aspect Score = Quantum (Q) x Severity (S) X Probability (P) x Duration (D)

4.3.6 **Any of the impact having a score of QSPD as greater than or equal to 81 shall be considered as significant.** This score shall be reviewed once a year.

4.3.7 Basis for Cut-off score :

The basis for cut-off score is taken as 81 or more as significant considering the following :

Quantum – within the facility = 3

Severity – Moderate release of toxic = 3

Probability – Weekly or more = 3

Duration – Lasts for a week = 3

Apart from the above experience of other industries was also considered.

4.4 Identification of Hazards, Risk Assessment and Determining Controls

4.4.1 Man interface sub-activities are selected for identifying the Hazards/Risks associated with the following activities (additionally check Lists at Annexure -1 is also used):

- Routine activités
- Non Routine activités
- Obvious hazard locations
- Auxiliary equipment and operational condition
- Activities of all personnel having access to the workplace including contractors, visitors, infrastructure, equipment and materials
- Facilities at the work place, within the defined scope, nature and timing to ensure that it is proactive rather than reactive, including human behavior, capabilities and other human factors



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- g. Changes or proposed changes in the Organization, its activities or materials
- h. Design of work areas, processes, installations and such infrastructure.
- i. Hazards originating outside the workplace capable of adversely affecting the health and safety of persons under the control of the organization.
- j. Hazards created in the vicinity of the workplace by work-related activities under the control of the organization.

4.4.2 All the identified hazards are evaluated for significance of the risk by using appropriate risk assessment rating criteria (Severity X Occurrence greater than or equal to 9 as "Major Risk" and any ill health causing hazard as "Major Risk" irrespective of severity rating).

4.4.3 The Hazards evaluated as "Major Risk" is subjected to Hierarchy of Determining Risk Control in the order of elimination (***remove the hazard totally***), substitution (***substitute the hazard with a less hazardous***), isolation (Isolate or separate the hazard from person at workplace) engineering controls (***modification of equipment, guarding, mechanical ventilation etc.***), administrative controls (***change work procedure or policies ex. rotating jobs, limiting time exposed to the hazard or display of signage / warning boards***), and PPE usage practices. The acceptable risk is with a score of 5 or less as per criteria set in the rating plan given at 4.3. Also for health related hazards, irrespective of "Severity" Score, Health Surveillance concept is introduced.

4.4.4 The identified hazards, major risk and hierarchy of risk controls have been listed in HOD / Departmental File

4.4.5 The master list of the Major Risks is kept updated by considering new process / equipment, if any, added. ***For the management of change, identification of hazards and risks associated with changes in the organization, the OH & S MS, or its activities, prior to the introduction of such changes envisaged.***

4.4.6 The following evaluation factors are considered to arrive at the Major Risks:

A. Legal

The identified Hazards that are linked to applicable Legal & Other requirements having relevance to employee welfare.

B. Occupational Health & Safety (OHS) Concerns

The impacts of the identified Hazards are evaluated on 'Occurrence' and Severity' (Refer HSE Format No. [CSF - 002A](#)) as stated below:



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i) Occurrence

Highly unlikely (Once in a year)	1
Unlikely (Once in 6 month)	2
Likely but Rare (once in 3 month)	3
Likely (Once in a Month)	4
More Likely (once in a week)	5

ii) Severity

First Aid	1
Slightly Harmful (Minor Injury)	2
Harmful (Injury requires Hospital Treatment)	3
Extremely Harmful (Serious injury i.e., amputation)	4
Fatal	5

4.5 Evaluation for Major Risk

4.5.1 OHS Hazards that attract Legal and Other Requirements are evaluated as per 4.4.6 A. If the score is 9 and above, or of concern to ill health then the Hazard is rated as "Major Risk"

4.5.2 If identified Hazards do not attract any Legal & Other requirements, then its occurrence & severity is evaluated by multiplying (i) x (ii) i.e. Occurrence x Severity (Refer Table below). Hazard scoring 9 and above attracts "Major Risk" and the rest are for future considerations.

The Hazard identification / evaluation are done by each Department/Division as per the Format shown below. In the case of purchase of new equipment, chemicals and new services, Purchase Department, Safety Department and P & M Department will assess safety considerations and adhere to specified procurement practices.



The Major Risk list is prepared and communicated to MR, which forms the framework for OHS performance improvement. On the basis of this, Objectives are set aligned to Company-Wide Objectives & Targets. Such Major Risks are to be discussed during the Management Review Meeting or a special meeting convened for the purpose.

4.6 Adoption of Control Measures

Significant Impacts as per clause 4.3 and Major Risk as per clause 4.5 will be reviewed and appropriate Operational Control procedures (OCPs) will be developed for compliance.

Refer **CSP-4.4.6** Procedure for “Preparation & Issue of Operational Control Procedure”.

4.7 Changes in Activities/Products/Services

Prior to introducing any change in activities/products/services/process /equipment, the concerned Construction Engineer initiating the change would undertake identification of significant environmental Impacts and Major Risks as per the aforesaid procedure for deciding whether,

- a) The list of significant aspects & impacts and Major Risks needs to be modified or
- b) New objectives and targets need to be set.

4.8 Document Review

The overall review of the aspects / impacts and hazards / Risk shall be carried out at least once in a year.

TABLE - I

QSPD EVALUATION CRITERIA FOR ENVIRONMENTAL IMPACTS

QUANTUM OF IMPACT	SEVERITY OF IMPACT	PROBABILITY OF IMPACT	DURATION OF IMPACT	WEIGH-TAGE
Within the work place	Insignificant release of non-toxic	Monthly or more	Less than a shift	1
Within work area	Significant release of non-toxic/ In significant release of toxic	Fortnightly or more	Lasts for a day	2
Within the facility	Moderate release of toxic or noise level (80-90 dB)	Weekly or more	Lasts for a week	3



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QUANTUM OF IMPACT	SEVERITY OF IMPACT	PROBABILITY OF IMPACT	DURATION OF IMPACT	WEIGH-TAGE
Within Construction site	Significant release of toxic or noise level >90 dB	Daily or more	Lasts for a month	4
Beyond the construction site	Significant release of toxic causing pollution	Continuous	Lasts for more than a month	5

ANNEXURE –1

TYPICAL HAZARDS ASSOCIATED WITH VARIOUS WORK ACTIVITIES

1. Fire
2. Explosion Reactions leading to disaster
3. Slips, Trips and Falls
4. Physical or Bodily injury due to Machinery and Equipment
5. Objects (flying or falling)
6. Electrical shock, Electrocution due to Electricity
7. Radiation hazards (Electro-magnetic, radioactive and other such rays)
8. Respiratory disorders (Hazardous Substances release, dust etc)
9. Confined Spaces
10. Noise and Vibrations
11. Climate and Lighting
12. Biological Hazards
13. Ergonomic Hazards
14. Hygiene and Welfare
15. Stress and Psycho-social Factors
16. Corrosiveness
17. Over pressure



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Check-lists for Hazards Identification

Location Specific - Hazard Identification Checklist

These locations will need to be included when identifying hazards.

- Materials receipt/storage areas
- Roofs
- Suspended ceilings
- Traffic routes including site/building access/egress
- Mixed pedestrian/vehicle routes
- Engineering workshops
- Dedicated contractor work area
- High voltage sub-stations / switch rooms
- Oils stores
- Petroleum stores
- Confined spaces
- Hazardous waste storage areas
- Smoking Area
- Underground sewers/drains
- Medical/occupational health centres
- Toilets/washrooms

Any relevant legislation requirements and history of incidents/near misses will need to be identified in order to complete risk assessment activities.



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Auxiliary Equipment specific - Hazard Identification Checklist

Auxiliary equipment listed below will need to be included when identifying hazards.

- Ladders and step ladders
- Working platforms
- Scaffolding and tower scaffolding
- Hoists – goods
- Lifts – persons
- Lifting tackle
- Fire extinguishers
- Electrical wiring/fuses
- Water pipe work
- Compressed air lines
- Office - electrical equipment
- Portable pumps
- Non flammable gas bottles
- Laser equipment
- Radiation sources
- Hoist
- Crane
- Coffee/tea machines
- Power vehicles
- Power lifting trucks
- Manual lifting trucks
- Battery chargers
- General ventilation systems
- Air conditioning
- Warehouse racking
- Safety signs
- First aid kits
- Portable tools – powered
- Portable tools – battery
- Portable tools - non powered
- Welding sets
- Fixed engineering workshop equipment