

HSEMSM
HSE /SR /01
Rev : 03
Eff. Date : 15.12.2008



PS - SR

**OCCUPATIONAL HEALTH SAFETY AND
ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL
(HSEMSM)**

(ISO 14001: 2004 & OHSAS – 18001: 2007)

**BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR – SOUTHERN REGION
CHENNAI – 600 035**

HSEMSM
HSE /SR /01
Rev : 03
Eff. Date : 15.12.2008



PS - SR

OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL

(ISO 14001: 2004 & OHSAS – 18001: 2007)

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| Controlled / Information Copy No. | Issue Date : 15.12.2008 |
| Copy Issued to : | Issued By : MR (HSE) |

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| PREPARED & REVIEWD BY : | R.V.SANJEEVI HEAD / Quality & MR |
| APPROVED BY : | P.R. SHRIRAM CEO / PSSR |

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR – SOUTHERN REGION
CHENNAI – 600 035

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|  | OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL | HSEMSM |
| | | Rev. No. 03 Date : 15.12.2008 |
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This Occupational Health, Safety and Environmental Management System Manual describes the organisation structure, responsibilities, practices and procedures for implementing, reviewing and maintaining the organisation's HSE policy.

The implementation of the Occupational Health, Safety & Environmental Management System (HSE) is the responsibility of all employees in the organisation including operational management and all support & service functions.

MR/HSE who is appointed by Head / PSSR acts as MR (ISO 14001) and MA (OHSAS 18001) and has the responsibility for establishing HSE Management System for PSSR. He is given full authority and organizational freedom to:

- Establish, implement and maintain HSE management systems with the aim of compliance with the HSE Management policy and objectives of the organisation
- Identify and review HSE related issues including legislations
- Set objectives and targets in consultation with HODs/ Site & SAS incharges
- Promote awareness amongst employees and other interested parties on HSE Management System
- Organise HSE audits and ensure required corrective and preventive actions.
- Generate Management Information Report (MIR) on implementation status for Management Review.

All Functional/ Department / Site & SAS incharges are required to comply with the provisions of the System. They have the authority , responsibility and accountability to implement the action plans to meet objectives and targets within their Function / Department /Sites.

Effectiveness of this System is to be ensured by awareness and participation of all the employees of PSSR.

HSE Management System brought out in this manual is authorized for implementation. Any conflict within the provisions of this manual shall be referred to Head/PSSR for resolution.

15.12.2008

CEO/PSSR




OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL

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AMENDMENT RECORD SHEET


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|------|----------|--------------|------------------|--------------|--------------|--------------|--------------|--|----------------|
| | | Doc No. | Affected Section | Revision No. | Doc No. | New Section | Revision No. | | |
| 1 | 21.09.02 | HSEMSM | All section | 00 | HSEMSM | All sections | 01 | Clause have changed due to change in the standard of ISO 14001: 1996 | 03/01/06 |
| 2 | 03.01.06 | HSEMSM | All section | 01 | HSEMSM | All sections | 02 | Revised as per ISO 14001: 1996 | 10/08/07 |
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1. DISTRIBUTION LIST:

- 1.1 The Master copy, reference copy of this manual shall be maintained by MR (HSE)
- 1.2 Controlled copy of the Manual shall be issued as per distribution list maintained by MR (HSE).
- 1.3 In case if Holder department ceases to exist, the holder shall return the controlled copy to MR (HSE).
- 1.4 Record for distribution shall be maintained by MR (HSE) as per Document Control Procedure (QMS/SR/16) of Quality Management Systems.
- 1.5 This manual shall also be released at the website of BHEL PS SR in read only mode. All members as indicated in the list of distribution as well as all other members can review the manual at the web site.
- 1.6 MR shall also maintain some copies of the manual (for information only) these copies of the manual shall not be figuring in the controlled copies, however, they shall be the duplication of the master copy of the manual and shall be for reference purpose only. The audit shall also be given one of such copies. The auditor can verify whether it is the latest copy of the original manual by referring to the master copy of the manual.

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| GM | Projects & North Chennai | | 00 / 03 | 15.12.2008 |
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| Head | H.R | | 00 / 03 | 15.12.2008 |
| Head | TSX | | 00 / 03 | 15.12.2008 |
| Head | Quality & MR | | 00 / 03 | 15.12.2008 |
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| COMPANY PROFILE | | Sheet No. 1 of 3 |

INTRODUCTION :

Bharat Heavy Electricals Limited (BHEL) with its registered office at BHEL House, Siri Fort , New Delhi – 110049 is one of the largest engineering public sector undertaking in India catering to the core sectors of Indian Industry, Transportation, Transmission and Telecommunications. BHEL is a leading player in the field of design, manufacture and supply of power generating equipments. BHEL has played a dominant role in stepping up our country power generation capacity of 1300 MW's during Independence to the present level of One Lakh MW, with a share of 65%. With the strategic aim of being closer to the customers, providing quick response and service, Power Sector was formed with its Head quarters at New Delhi and four region spread across the country.

Power Sector – Southern Region

PS-SR is one of the regional centres formed in the year 1974, with its Head Quarters at Chennai 600 035.

PSSR covers the identification and servicing needs of power and industrial customers like Electricity Boards, National Thermal Power Corporations , Nuclear Power Corporation and other power utilities. Steel Plants, Petrochemicals among others in the State of Tamil Nadu, Andhra Pradesh, Karnataka, Kerala, Orissa , Madhya Pradesh, Chatisgarh and the Union Territory of Pondicherry.

Installation and servicing offered by this region broadly include:

Boiler and Auxiliaries

Turbine and Auxiliaries (Thermal & Hydro)

Generator and Auxiliaries (- Do -)

Gas Turbine & Combined cycle power project


Piping

Electrical equipments and control systems

Other mechanical equipments, systems and structures

In addition, related civil works are also undertaken as per contract terms and conditions.

A separate department to take up Service After Sales (SAS) is located at Secunderabad and this department under PSSR is solely responsible for various types of Service after Sales requirements of customer, both of BHEL and Non-BHEL products.

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| COMPANY PROFILE | | Sheet No. 2 of 3 |

The Chief Executive Officer (CEO) of PSSR reports to Director (Power) and is supported by the following Heads of Department in Head Quarters.

1. GM -- Projects –I
2. GM -- Projects –II
3. GM - Projects & North Chennai
4. Head -- PS – Projects
5. Head -- IS – Projects
6. Head -- Commercial & Business Excellence
7. Head -- Quality
8. Head -- TSX
9. Head -- Facility Engg.
10. Head -- Subcontracts
11. Head -- Hydro & Nuclear
12. Head -- Elec. C&I
13. Head -- Project Planning & CC
14. Head -- IT
15. Head -- Head--Finance
16. Head -- Vigilance & Security
17. Head -- HR
18. Head -- BOP
19. Head -- Purchase & Stores
20. Head -- MSX
21. Head -- SAS, Secunderabad
22. Head -- SAS Cell - Tiruchy

BHEL-PSSR is an organisation committed to the welfare of its employees and surroundings. It is taking up measures to maintain ecological balance by providing thrust. for tree plantation in the project areas.

BHEL-PSSR is having a strength of highly experienced, motivated, trained workforce to carry out its operation in the Southern region.

QUALITY SYSTEM


PSSR is an ISO 9001 certified company from Dec, 1993 onwards and obtained ISO 9000 – 2000 certification in Dec. 2001.

PSSR has also an accredited calibration centre and all instruments and gauges are calibrated periodically with traceability to National Standards.

Continuous improvements in selective areas are effected based on results and customer feed back.. Management reviews are done periodically to monitor the adequacy and effectiveness of the Quality Systems.

HSE MANAGEMENT SYSTEM


PSSR has adopted an integrated approach to establish and implement Environment Management system conforming to ISO 14001: 1996 in the year 2002 and Occupational Health & Safety Management System conforming to OHSAS 18001- 1999. The integrated manual shall be referred as Health, Safety & Environment (HSE) Management System Manual. The company has upgraded itself in the area of ISO 14001 as per the requirements of ISO 14001: 2004 version in the year 2006 and in the area of OHSAS 18001 as per the requirements of OHSAS 18001 : 2007 version in 2008.

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For effective implementation of the system, HSE Management System Manual has been brought out for compliance in all operations of the region. This HSE management system provides a structured process for achievement of continual improvement, the rate and extent of which will be determined by the organization in the light of economic and other circumstances. The system facilitates planning, control, monitoring, corrective action, auditing and review of activities to ensure that occupational health, safety and environment policy is complied with and the system is capable of adopting to changing circumstances.

RESOURCE CONSERVATION :

- Various projects for conservation of critical resources like energy & water are encouraged by PSSR.
- Sign boards are also displayed at different places to bring awareness among people regarding conservation of resources.
- Scrap generated at project sites are collected, segregated & disposed in a systematic way. This system has yielded in increased rate of realization.
- Oils / Chemicals are treated / reused for conservation of resources & reduction of pollution.

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| HSE MANAGEMENT SYSTEM MANUAL SCOPE | | Sheet No. 1 of 1 |

The HSE Management Systems manual covers the Environmental, Occupational Health and Safety Management System requirements of BHEL, PSSR and follows the specification set by :

**ISO 14001 : 2004 - Environmental Management Systems – Requirements with guidance for use
&
OHSAS 18001 : 2007 - Occupational Health & Safety Management Systems - Requirements**

This HSE Management system Manual describes the System Procedures for the various activities and functions of the overall HSE Management System of BHEL, PSSR. This HSE Management System Manual forms the basis for the HSE system related clauses of ISO 14001 : 2004 and OHSAS 18001: 2007 .

This HSE MS Manual is strictly controlled for any form of circulation and amendment. The hard “controlled copies” of either the HSE MS manual or the procedures shall be marked “Controlled copy” . The photocopies or the like of any of these controlled documents shall be treated as uncontrolled copies and shall not be covered under the documented HSE Management system as defined in this HSE MS manual. Only the latest revision number shall be valid for circulation and use. The MR (HSE) shall control all amendments, revisions, issues and circulation of this HSEMS manual.

All the procedures referred to in this HSEMS manual have been approved by the Top Management or by the concerned authorized person for use and system implementation.

All the departments of BHEL, PSSR, Chennai , Project Sites under PSSR , Service Sites and Office under SAS , Secunderabad are covered by this system. The aspect impact identification shall be done for the HQ, project sites, service sites and offices under SAS. However, since other than HQ all the site related work is not a permanent established work the aspect impact shall stand to be null and void after the particular project is completed which shall be the property of the customer.

Guidelines for References :

ISO 14001: 2004 Environmental Management Systems - Specifications with Guidance for use


OHSAS 18001: 2007 : Occupational Health and Safety Management Systems – Specifications


OHSAS 18002: 2008 : Guidelines for implementation of OHSAS 18001

ISO 14004:2004 Environmental Management Systems General Guidelines on Principles, System and supporting techniques

ISO 19011: 2002 Guidelines for Environmental Auditing General Principles


Note: where the word BHEL, PSSR activity is mentioned it refers to the activities of the HQ, service sites under SAS, and installation sites .

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| ABBREVIATIONS AND DEFINITIONS | | Sheet No. 1 of 3 |
| HSE | Health, Safety and Environment | |
| HSEMS | Health, Safety and Environment Management system. | |
| HSEMSM | Health, Safety and Environment Management System Manual | |
| HSE MS OM | Health, Safety and Environment Management System Operational Manual | |
| HSEMRC | Health, Safety and Environment Management Review Committee | |
| OHSAS | Occupational Health & Safety Assessment Series | |
| EMS | Environmental Management System | |
| OHS | Occupational Health and Safety | |
| OCP | Operational Control Procedure | |
| HOD | Head of Department | |
| HOF | Head of Function | |
| MQC | Management Quality Committee | |
| REV | Revision | |
| DOC | Document | |
| REF | Reference | |
| MR | Management Representative | |
| MA | Management Appointee | |
| CT | Core Team | |
| SP | Standard Practice | |
| E | Edition | |
| SPCB | State Pollution Control Board | |
| MoEF | Ministry of Environment and Forest | |
| CPCB | Central Pollution Control Board | |
| LC | Legislative concern | |
| IPC | Interested party concern | |
| BC | Business Concern | |
| DC | Domino concern | |
| CE | Chronic effect | |
| P & D | Planning and Development | |
| RF | Recording Format | |

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| ABBREVIATIONS AND DEFINITIONS | | Sheet No. 2 of 3 |


Definitions

1. **Auditor/Audit** : Person with the competence to conduct an audit (as per ISO 9000: 2000, 3.9.9) / Systematic, independent and documented process for obtaining “audit evidence” and evaluating it objectively to determine the extent to which “audit criteria” are fulfilled.
2. **Environment** - Surrounding in which an Organisation operates, including Air, Water, Land, Natural resources, Flora, Fauna, Humans, and their interrelation.
3. **Health/ill health** – Occupational health / identifiable, adverse physical or mental condition arising from and/or made worse by a work activity and/or work-related situation.
4. **Safety** – Freedom from unacceptable risk of harm.
5. **Environmental, Occupational health & Safety (HSE)** – Conditions and factors that affect, or could affect the Environmental, Occupational health and safety conditions and factors of interested parties, well-being of employees, temporary workers, contractor personnel, visitors and any other person in workplace.
6. **Continual improvement** – Recurring process of enhancing the HSE management system to achieve improvements in overall environmental and occupational health and safety performance in line with the BHEL, PSSR HSE policy. (The process need not take place in all areas of activity simultaneously).
7. **Document** – Information and its supporting medium.
8. **Environmental Aspect** – Element of BHEL, PSSR activities, products or services that can interact with the environment.
9. **Significant Environmental Aspect** – A significant environmental aspect is an environmental aspect that has or can have a significant environmental impact.
10. **Environmental Impact** - Any change to the environment, whether adverse or beneficial, wholly or partially resulting from BHEL, PSSR activities, products or services.
11. **Environmental, Occupational Health and safety Management systems** - The part of the overall management system that includes structure, planning activities, responsibilities, practices, procedures, processes and resources for developing and maintaining the HSE policy.
12. **HSE Objectives** - Overall HSE goals arising from the HSE policy, that BHEL, PSSR set itself to achieve HSE performance and which is quantified where practicable.
13. **HSE Policy** – Statement by top management of its intentions and principles in relation to its overall environmental, Occupational health and safety performance, which provides a framework for action and for the setting of its HSE objectives and targets.
14. **HSE Targets** – Detailed performance requirement, quantified where practicable, applicable to BHEL, PSSR’s HSE objectives and that needs to be set and met in order to achieve objectives.
15. **Internal audit**: systematic, independent and documented process for obtaining audit evidence and evaluating objectively to determine the extent to which the system audit criteria set by the organisation.

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| ABBREVIATIONS AND DEFINITIONS | | Sheet No. 3 of 3 |

Definitions

- 16. Interested Party** – Individual or group, inside or outside the workplace concerned with or affected by the HSE performance of BHEL, PSSR.
- 17. Incident** – Work related event(s) in which an injury or ill health or fatally occurred or could have occurred.
- 18. Near Miss Incident** – An incident where no ill health, injury, damage or other loss occurs is also referred to as “Near-Miss incident”.
- 19. Hazards** – Source, situation or act with a potential for harm in terms of human injury or ill health or a combination these.
- 20. Risks** – Combination of the likelihood of an occurrence and consequences of a specified hazardous event or exposure(s) and the severity of injury or **ill health** that can be caused by the event or exposure(s).
- 21. Risk Assessment** – Overall process of evaluating the magnitude of risk arising from a hazard(s), taking into account the adequacy of any existing controls, and deciding whether or not the risk(s) is acceptable.
- 22. Acceptable Risk** – Risk that has been reduced to a level that can be endured by BHEL, PSSR with regard to its legal obligations and HSE Policy
- 23. Hazard identification** – Process of recognizing that a hazard exists and defining its characteristics.
- 24. Non-Conformance** – Any deviation from work standards, practices, procedures, regulations, management system performance etc. that could either directly or indirectly lead to deviate from BHEL, PSSR’s HSE policy, or lead to injury, illness, to the workplace environment, or a combination of these.
- 25. HSE Performance** – Measurable results of the HSE management system, related to BHEL, PSSR’s control of environmental aspects & OHS Risks, based on BHEL, PSSR’s HSE Policy & Objectives.
- 26. HSE Objectives & targets (Objectives)**
- Short Term : 1-6 Months.
Medium Term : 1-12 Months.
Long Term : 1- 24 Months.
Refer item 10 to 12 above for definition of HSE Objectives and targets.
- 27. Corrective action / Preventive action** – corrective action to eliminate the cause of a detected non conformity or other undesirable situation / preventive action is to eliminate the cause of a potential nonconformity or other undesirable potential situation.
- 28. Procedure:** specified way to carry out an activity or a process
- 29. Record:** Document stating results achieved or providing evidence of activities performed.
- 30. Workplace:** any physical location in which work related activities are performed under the control of the organisation.

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| GENERAL REQUIREMENTS | | Sheet No. 1 of 2 |

1. PURPOSE:

To define Environment, Occupational Health and Safety Management Systems and its requirement, for all the activities, product and services at BHEL, PSSR.

2. SCOPE :

Applicable to all the activities / product and services at BHEL, PSSR.

3. RESPONSIBILITY:

MR (HSE)

4. PERFORMANCE CRITERIA:


Documented HSE Management System (HSEMSM, HSE Policy and Management Review meeting).

5. CROSS REFERENCE:

- ISO – 14001: 2004 - Environmental Management systems specification with guidance for use.
- OHSAS – 18001: 2007- Occupational Health & Safety Management Systems specification.

6. PROCEDURE:

| Sl.No. | Activity | Responsibility |
|--------|---|--|
| 6.1 | To ensure that all requirements of EMS specification with guidance for use of ISO-14001: 2004 and OHSMS specification for use of OHSAS-18001 (2007) standards are addressed through different chapter of this manual for easy understanding and subsequent meeting the requirement of both ISO-14001 and OHSAS 18001 | MR (HSE) |
| 6.2 | The HSEMS is so designed that : <ul style="list-style-type: none"> • It covers all clause requirements of ISO-14001 : 2004 and OHSAS-18001-2007. • It covers organization needs & HSE Policy. | MR (HSE) |
| 6.3 | The HSE Operational manual is designed to cover: <ul style="list-style-type: none"> • HSE Management Programme as applicable for relevant department in line with company's HSE policy and significant environmental aspects / OHS Hazards and risks. • Operational control Procedures programme as applicable for relevant department in line with company's HSE policy and significant environmental aspects / OHS Hazards and Risks. | Site Incharge / Head-SAS / HODs / MR (HSE)/ Core Team |

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| GENERAL REQUIREMENTS | | Sheet No. 2 of 2 |


| Sl. No. | Activity | Responsibility |
|---------|--|---|
| 6.4 | The HSEMS will help to enhance the HSE performance by improving activities, processes, services and product quality control, which are interacting with the environment, affecting occupational health & safety | Site Incharge / Head-SAS / HODs / MR (HSE) |
| 6.5 | To assist implement, maintain and review the HSEMS of this company a core team is constituted | CEO |
| 6.6 | Core Team is responsible for : Designing of HSEMS on the basis of preliminary HSE review considering <ul style="list-style-type: none"> • To develop and assist in development of HSE policy • Legislative and regulatory requirements • Identification of significant environmental aspects/ Impacts and non-tolerable OHS hazards / risks • To assist in establishing objectives / targets, HSE management programmes and operational control as relevant • Examination of all existing HSE management practices and procedures • An evaluation of feedback from the investigation of previous incidents ./ accidents, if any • Providing general awareness to the employees To coordinate HSE related activities as required by MR(HSE) / Site HSE Coordinator | Core Team |
| 6.7 | Management Quality Committee is responsible: To review and evaluate the performance, suitability / adequacy of HSEMS at defined intervals in order to maintain continual improvement and effectiveness of company's HSE Management Systems and HSE Policy | MR (HSE) / Core team |

7.0 RECORDS :

| Record Title | Record No. | Location | Responsibility | Retention Time |
|---|------------|----------|----------------|----------------|
| Reference: Records/Record Management procedure Clause No: | | | | |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

All employees at BHEL, PSSR shall follow the requirement of this HSE policy. The respective HOD's / Site Incharges / Head-SAS shall take corrective / preventive action as per HSEMSM- 22 in case any deviation observed.

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| | | Rev. No. 03 Date : 15.12.2008 |
| HSE POLICY | | Sheet No. 1 of 5 |

1. PURPOSE:

To define HSE policy of BHEL, PSSR

2. SCOPE :

Applicable to all the activities / product and services and environmental aspects / Impacts and OHS hazards / risks of BHEL, PSSR.

3. RESPONSIBILITY:

- Defining / authorizing HSE Policy - CEO
- To provide inputs / implement procedures for defining HSE policy - MR (HSE)
- To follow HSEMSM and HSE Operational Manual - All Employees

4. PERFORMANCE CRITERIA:


Defined HSE policy .

5. CROSS REFERENCE:

- Clause 4.2 ISO 14001: 2004 Environmental Policy
- Clause 4.1.4: ISO 14004: 2004:
- Clause 4.2 OHSAS 18001: 2007- Occupational Health and Safety Policy
- Register of applicable HSE regulations
- Register of OHS hazards and risks
- Register of Environmental Aspects and Impacts

6. PROCEDURE:

| Sl.No. | Activity | Responsibility |
|--------|---|--|
| 6.1 | Prepare register of environmental aspects and impacts and register of OHS hazards and risks after initial HSE review in coordination with site coordinator | MR (HSE) / Site Incharge / Core team / HODs |
| 6.2 | Prepare register of applicable HSE regulations | MR (HSE) / HODs Core team |
| 6.3 | Establish the HSE policy by considering: <ul style="list-style-type: none"> • significant environmental aspects and non tolerable OH&S Hazards • applicable legal and other requirements • Past and present HSE performance with opportunities and needs for continual improvement • resources required • Discussions with CEO, MQC, core team and employees in particular | MR (HSE) / HODs Core team |

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| HSE POLICY | | Sheet No. 2 of 5 |


| Sl. | Activity | Responsibility |
|-----|---|-------------------------------|
| 6.4 | While framing and drafting HSE policy ensure that it: <ul style="list-style-type: none"> • Is appropriate to the nature, scale of environmental aspect and occupational health and safety risks of activities, products and services • Includes a commitment to continual improvement in HSE, prevention of pollution and prevention / control of OHS risks • Includes a commitment to comply with applicable HSE regulations • Provides to strengthen awareness and training while seeking cooperation from the employees • Is applicable at customer's site under PSSR operation. • Is documented, implemented and maintained and communicated to all employees • Is made available to the public / interested parties | Core Team & HODs MR (HSE) |
| 6.5 | Prepare and send the final draft of HSE policy to CEO for approval and issuance | MR (HSE) |
| 6.6 | Approval of HSE Policy | CEO |
| 6.7 | Communicate the authorized policy to all concerned as per procedure for communication along with relevant/applicable customer's HSE policy to BHEL. | MR(HSE)/ Site In charge/HOD |
| 6.8 | The HSE policy, which is developed for BHEL, PSSR is annexed | |
| 6.9 | The HSE policy shall be reviewed periodically during Management reviews as per procedure for Management review for compliance and relevance / updates | MQC |

7.0 RECORDS :

| Record Title | Record No. | Location | Responsibility | Retention Time |
|--------------------------------|------------------|----------------|----------------|-----------------------|
| PSSR HSE Policy | HSEMSM-R-8-01/00 | MR(HSE) Office | MR(HSE) | 3 years |
| Corporate Environmental Policy | - | MR(HSE) Office | MR(HSE) | Till further revision |
| Corporate OHS Policy | - | MR(HSE) Office | MR(HSE) | Till further revision |

8.0 VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION :

All employees at BHEL, PSSR shall follow the requirement of this HSE policy. The respective HOD's/ Site Incharges / Head-SAS shall take corrective / preventive action as per HSEMSM . Any conflict within the provisions of this manual shall be referred to Head / PSSR for resolution.

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| HSE POLICY | | Sheet No. 3 of 5 |




CORPORATE POLICY ON EMS

TO STRIVE TO BE AN ENVIRONMENTAL FRIENDLY COMPANY IN ITS ACTIVITIES, PRODUCTS AND SERVICES THROUGH

- ◆ **Compliance with applicable Environmental Legislation / Regulations.**
- ◆ **Continual improvement in Environmental Management System to protect our natural environment and control pollution.**
- ◆ **Promotion of activities for conservation of resources by Environmental Management.**
- ◆ **Enhancement of Environmental awareness amongst our employees, customers and suppliers.**
- ◆ **Assist and co-operate with concerned Government agencies / Regulatory bodies engaged in Environmental activities, offering BHEL's capabilities in this field.**

Sd/...

Chairman and Managing Director

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| HSE POLICY | | Sheet No. 4 of 5 |




Occupational Health and Safety Policy

- ❖ **Compliance with applicable Legislation and Regulations.**
- ❖ **Setting objectives and targets to eliminate / minimize / control risks due to Occupational and Safety Hazards.**
- ❖ **Appropriate structured training of employees on Occupational Health and Safety (OH&S) aspects:**
- ❖ **Formulation and maintenance of OH&S Management programmes for continual improvement**
- ❖ **Periodic review of OH&S Management System to ensure its continuing suitability, adequacy and effectiveness**
- ❖ **Communication of OH&S policy to all employees and interested parties.**

In pursuit of these Policy requirements, BHEL will continuously strive to improve work practices in the light of advances made in technology and new understandings in Occupational Health, Safety and Environment Science.

Sd/-

CHAIRMAN AND MANAGING DIRECTOR

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| HSE POLICY | | Sheet No. 5 of 5 |



We at BHEL/ PSSR , are committed to prevention of injury and ill Health and to provide Safe, Healthy and Environmental friendly atmosphere. We shall strive to continually improve these through :

- *Compliance with applicable Legislation and Regulations of Health, Safety and Environment*
- *Minimising risks arising from Occupational health and safety hazards*
- *Minimising / controlling pollution and waste generation*
- *Periodic review of our Objectives , targets and HSE Management Systems for its adequacy and effectiveness.*
- *Creating awareness amongst our employees, Suppliers and interested Parties through communication and Training*

*P.R. SHRIRAM
CEO / PSSR*



**OCCUPATIONAL HEALTH SAFETY AND
ENVIRONMENTAL MANAGEMENT SYSTEM
MANUAL**

Doc.No.HSEMSM- 9

Rev. No. 03

Date : 15.12.2008

ENVIRONMENTAL ASPECTS

Sheet No. 1 of 8

1. PURPOSE:

To identify the environmental aspects of various activities, products and services of PSSR and to evaluate the impacts to determine the Significant environmental aspects.

2. SCOPE:

Application to all activities, and services of BHEL, PSSR. (Since the activities are of similar nature and magnitude at all the sites including the same kind of process aspect impact identification is not made site specific. A general aspect impact is made which meets the requirements of all the sites). Since BHEL PS SR is involved into only servicing and commissioning and the products installed during commissioning is provided by the client on which BHEL PSSR has no control the aspect impact for product is not considered at this stage.

3. RESPONSIBILITY:

MR (HSE) / Core Group

4. PERFORMANCE CRITERIA:

An updated register of Environmental Aspects and Impacts


5. CROSS REFERENCE.

- ISO - 14001, 2004 Clause: 4.3.1 Environmental Aspects.
- ISO – 14004, : Clause: - 4.3.1.
- Records of correspondence with legal & regulatory bodies.
- Previous records of environmental incidents or accidents if any.
- Prevailing applicable Acts and legislation.


6. PROCEDURE:

6.1 Identification of significant environmental aspects and their impacts


| Sl. No. | Activity | Responsibility |
|----------------|--|---------------------------------|
| 6.1.1 | Appointment of MR(HSE) and core team to control, guide and facilitate activities related to ISO 14001. | CEO |
| 6.1.2 | Provide training / awareness to employees for identification and evaluation of environmental aspects / impacts | MR (HSE)/ Site Incharge / HR |
| 6.1.3 | Prepare format for identification and evaluation of environmental aspects / impacts. | MR (HSE)/ Site Incharge |
| 6.1.4 | The core team along with trained Environment auditors/experts, shall carry out survey, consultation with a cross section of employees, contractors and collect data on environment aspects & impacts related to all activities, product and services. The core team shall identify the areas of obvious physical improvement to strengthen environment management system | Core Team |

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| Sl.No. | Activity | Responsibility |
|--------|---|--|
| 6.1.5 | <p>While identifying and evaluation of environmental aspects / impacts during initial environmental review the, following criteria should be considered.</p> <ul style="list-style-type: none"> • All activities with previous records of environment Incidents, Accidents. • Review of the normal, abnormal (including start-up/shutdown) and emergency operations; • Review of existing environmental practices including methods of waste disposal; • Inputs from regular site & MQC meetings. • Evaluation of feed back from investigation of previous incidents/ accidents/ regulatory non-compliance; <ul style="list-style-type: none"> ➤ Views/feedbacks from <i>internal & external</i> interested parties (<i>like employees, suppliers, customers, Government agencies</i>) including any complaints; ➤ Occurrences of air pollution, water pollution, land contamination, resource loss, noise pollution; • Any other environmental concern. • Activities of all personal having access to work place (including sub contractors & visitors). • Facilities at the work places, whether provided by the organization or others. | Core Team |
| 6.1.6 | <p>Consider the following other conditions while identifying environmental aspects and impacts :</p> <ul style="list-style-type: none"> • DIRECT: Activities, which can be controlled by BHEL,PSSR. • INDIRECT: Activities where BHEL,PSSR can have influence on its control. • NORMAL CONDITION: Environmental Impact converted to tolerable/ non-significant condition & does not warrant any special preventive/protective provisions or measures. • ABNORMAL CONDITION: Environmental Impact associated with identified aspect is beyond tolerance limit and does warrant specific use of preventive/protective provisions or measures. <p>EMERGENCY CONDITION: Impacts, which are contained or mitigated by invoking emergency procedures related with potential foreseeable emergency situations.</p> | |
| 6.1.7 | Prepare a consolidated list of Environmental Aspects and associated Impacts in the format no HSE –F – AR-01 / 00 | Site Incharge |
| 6.1.8 | Record Environmental Aspects and associated Impacts & also the completeness in format no HSE – F – AR-01 /00 | MR(HSE) |
| 6.1.9 | Conduct site visits to verify the identified Environmental Aspects and associated Impacts & also the completeness in the prescribed Format. | MR(HSE)/ Site Incharge / Core Team |

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| ENVIRONMENTAL ASPECTS | | Sheet No. 3 of 8 |

| Sl.No. | Activity | Responsibility |
|--------|---|------------------------------------|
| 6.1.10 | Based on the above prepare a list of activities of identified Environmental Aspects and associated Impacts. | MR(HSE)/ Site Incharge / Core Team |
| 6.2 | Evaluation of identified Environmental Aspects and associated Impacts and identification of Significant Impacts. | MR/ Core Group |
| 6.2.1 | <p>Criteria for Environmental assessment is developed through brain storming and discussion by core team and MR (HSE) is given below:</p> <p>Legislative Concern (LC)</p> <p>If identified environmental aspects / impacts are governed by Indian environmental legislation.</p> <p>Interested party concern (IPC) potential concern of individual or groups affected or may be affected by the environmental activities of PSSR</p> <p>PP: meaningful opportunities for pollution prevention</p> <p>ScSeD criteria- Refer HSE – F- AR- 01 / 00</p> <ul style="list-style-type: none"> • Sc (Scale): Area of spread of environmental Impact • Se (Severity) : Level of Environmental Damage, magnitude of harm • D (Duration) : Time period during which environmental impact prevails: <p>This methodology of Environmental assessment provides for identification of Significant Aspects. The above Sc, Se & D criteria shall be applied as per the rating given in HSE – F- AR- 02 /00 with this procedure.</p> | |
| 6.2.2 | <p>While identifying Significant Aspects consideration shall be given to</p> <ul style="list-style-type: none"> • Air Pollution • Water Pollution • Land Contamination • Noise Pollution • Resource Conservation / Depletion of Natural Resources • Legal Compliance, Applicable legislation / Regulations • Waste management • Global Impacts • Interested parties concerns • Any other (PP etc.) as relevant | |

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| Sl. | Activity | Responsibility |
|-------|--|---|
| 6.2.3 | Treat any of environmental aspects falling under ‘Over Riding Factors’ as Significant Aspect. Any environmental aspects falling in to any category other than trivial and moderate shall be treated as significant aspect (Refer HSE – F – AR- 03 / 00). Sc, Se & D score may be used to prioritise amongst the significant aspect. | Core Team |
| 6.2.4 | Based on the above prepare feasibility analysis of the significant environmental impacts in the prescribed format (HSE – F- AR- 04 /00 which shall be considered by organization for setting objectives & targets in first place & or control procedures. | Core Team |
| 6.2.5 | Prepare a “Register Environmental Aspects and Impacts: Which shall include : a. Updating sheet. b. List of departments. c. Facility layout chart indicating appropriate Environmental issues. d. Prioritisation of Significant Aspects e. Identification of Environmental Aspects, Assessment of identified environmental Impacts and feasibility study of the elimination/reduction /control measures. | MR (HSE) |
| 6.3 | Keep Register of Environmental Aspects and Impacts “Up To Date “. | MR (HSE) |
| 6.3.1 | Any new / modified or changed environmental aspects/ Impacts in existing projects/ new sites / regional office, introduction of new activity within the company, changes in the applicable legislation/ regulations shall be identified & included in the register of Environmental Aspects and Impacts for environmental assessment as per the procedure of consultation & communication once in six months or earlier. . | HODs/ Site Incharge/ Head-SAS/ MR (HSE) |
| 6.3.2 | The Environmental Aspects and Impacts of new projects/expansion project shall be identified & included in the “Register of Environmental Aspects and Impacts” as per the procedure for “consultation and communication”. | HODs/ Site Incharge/ Head-SAS/ MR (HSE) |
| 6.3.3 | The above procedure shall be repeated annually to keep the Environmental Aspects and Impacts of the organizational activities up to date. | - Do - |

7. RECORDS:

| Record Title | Location | Responsibility | Retention Time |
|---|-----------------|----------------|----------------|
| Register of Environmental Aspects and Impacts | MR (HSE) office | MR (HSE) | 3 Years |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

MR (HSE) shall ensure the effective implementation of the above procedure and in case of deviations he shall take appropriate corrective and preventive action. The record of deviation and reasons shall be maintained. He shall also undertake periodic site visits to verify whether the register of Environmental Aspects and Impacts is kept up to date.

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| ENVIRONMENTAL ASPECTS | | Sheet No. 5 of 8 |

IDENTIFICATION OF ENVIRONMENTAL ASPECTS / IMPACTS AND EVALUATION / MANAGEMENT MEASURES
Format No HSE-F-AR-

01 / 01

| Activity | Aspect | | | Impact | Evaluation | | | | Over-riding Factors (LC / IPC / PP / Any other) | Significance | Management Measure |
|----------|-------------|--------|------------|--------|------------|----|---|-----------------|--|--------------|--------------------|
| | Description | Di / I | N / AN / E | | Sc | Se | D | Total = Sc+Se+D | | | |
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Di- Direct, I- Indirect , N = Normal, AN= Abnormal, E = Emergency, Sc-Scale , Se- Severity, D –Duration, LC- Legislative Concern, IPC-Interested Party Concern, PP- Pollution Prevention / Resource Conservation.



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ENVIRONMENTAL ASPECTS

Sheet No. 6 of 8

IDENTIFICATION OF ENVIRONMENTAL ASPECTS / IMPACTS AND EVALUATION / MANAGEMENT MEASURES

Format No HSE-F-AR-02 / 01


| Activity | Aspect | | | Impact | Evaluation | | | | Over-riding Factors (LC / Any other) | Significance | Management Measure |
|----------|-------------|--------|----------|--------|------------------------|--------------------------------------|--|----------------|--------------------------------------|----------------------------|--------------------|
| | Description | Di / I | N/ AN /E | | Scale (S1) | Severity (S2) | Duration (D) | Total S1+S2 +D | | | |
| | | | | | Spot (1) | Insigni- ficant / Minor (2) | Very Short <1 hour (1) | | | Trivial (4) | |
| | | | | | Within Dept (2) | Moder- ate (4) | Moderate hour but < = 8 hours (2) | | | Moderate (5-8) | |
| | | | | | Within Site (3) | High (6) | Long 8 hours but <= 24 hours (3) | | | Substantial (9-12) | |
| | | | | | Outside Site (4) | Very High (8) | Continuos > 24 hours (4) | | | Intolerable (13-16) | |

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| | ENVIRONMENTAL ASPECTS | Sheet No. 7 of 8 |

DETERMINING SEVERITY OF ENVIRONMENTAL IMPACTS – GUIDANCE CRITERIA

Format No HSE-F-AR-03 / 01

| Level of Harm | Guidance Criteria |
|-----------------------|---|
| Insignificant / Minor | Momentary Discomfort does not require control |
| Moderate | May require control / mitigation |
| High | Control / mitigation certainly |
| Very High | Sever ecological destruction Severe Public health exposure / fatalities due to industrial activity Irreversible despite control |

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FEASIBILITY ANALYSIS OF SIGNIFICANT ENVIRONMENTAL ASPECTS

Format No HSE-F-AR-04 / 00

| S. No | Activity / product / Service | Significant Aspect | Associated Impact | Measures Required to | | | | Operational Feasibility | Economic Viability | Elimination / Reduction / Control | Ref. Doc |
|-------|------------------------------|--------------------|-------------------|----------------------|------------------------|-------------------|----------------------|-------------------------|--------------------|-----------------------------------|----------|
| | | | | Eliminate or Reduce | | | Control | | | | |
| | | | | Techn-ology | Physical Improve ments | Feasibility Study | Technique / Training | | | | |
| | | | | | | | | | | | |

Technology

Physical improvement

Feasibility study

Operational feasibility

Economic viability

- Whether new technology or modification in the present technology required
- Whether new physical construction or modification in the present physical condition required
- Whether feasibility study is required to identify the possible solution
- Whether proposed measure shall be operationally feasible
- Whether proposed measure shall be economical viable.



**OCCUPATIONAL HEALTH SAFETY AND
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Doc.No.HSEMSM-10
Rev. No. 03
Date 15.12.2008

**HAZARD IDENTIFICATION, RISK ASSESSMENT AND
DETERMINING CONTROL**

Sheet No. 1 of 9

1. PURPOSE:

To identify the occupational health and safety (OHS) hazards and the associated risks and identify associated significant occupational health and safety (OHS) risks. This is to facilitate setting of OHS objectives and targets and also to control the risk and to keep this information up to date.

2. SCOPE:

Application to all activities, products, services of BHEL, PSSR.

3. RESPONSIBILITY:

Core Team, MR (HSE), HODs and Site Incharges.

4. PERFORMANCE CRITERIA:

An updated register of Occupational Health & Safety (OHS) Hazards & associated risks.

5. CROSS REFERENCE.

- OHSAS – 18001: 2007: Clause: 4.3.1 Planning of hazard identification, Risk assessment and risk control.
- OHSAS-18002,2007 : Guidelines for implementing of OHSAS 18001.
- Records of correspondence with legal & regulatory bodies.
- Previous records of incidents if any.
- Prevailing applicable Acts and legislation.
- Facility layout chart

6. PROCEDURE:

- a. Identification of occupation Health and safety(OHS) Hazards and Risks

| Sr. | Activity | Responsibility |
|------------|--|----------------------------------|
| 6.1.1 | Appointment of MR(HSE) | CEO |
| 6.1.2 | Appointment of core team to control, guide and facilitate activities related to OHSAS 18001 | CEO |
| 6.1.3 | Provide training / awareness to employees for identification and evaluation of occupational health and safety (OHS) hazards and associated risks | MR (HSE)/ Site Incharge HR |
| 6.1.4 | Prepare format for identification of occupational health and safety (OHS) hazards and associated risks | MR (HSE)/ Site Incharge |



**OCCUPATIONAL HEALTH SAFETY AND
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Doc.No.HSEMMSM-10


Rev. No. 03

Date : 15.12.2008

**HAZARD IDENTIFICATION, RISK ASSESSMENT AND
DETERMINING CONTROL**

Sheet No. 2 of 9

| Sl. | Activity | Responsibility |
|--------|---|---------------------------------|
| 6.1.5 | The core team along with trained Environment/OHS auditors/experts, shall carry out survey, consultation with a cross section of employees, contractors and collect data on occupational health and safety (OHS) hazards and risks related to all activities, product handling and services. The core team shall identify the areas of obvious physical improvement to strengthen occupational health and safety management system | Core Team |
| 6.1.6 | While identifying occupational health & safety (OHS) hazards and risks during initial OHS review the, following criteria should be considered. <ul style="list-style-type: none"> • All activities with previous records of Incidents, Accidents. • Inputs from regular site & MQC meetings. • All activities routine & non-routine, where hazards and risks are involved. • Evaluation of feed back from investigation of previous incidents/accidents. • Examination of all existing OHS procedures and practices. • Activities of all personal having access to work place (including sub contractors & visitors). • Facilities at the work places, whether provided by the organization or others. | Core Team |
| 6.1.7 | Consider the following other conditions while identifying environmental aspects impacts : <ul style="list-style-type: none"> • DIRECT: Activities, which can be controlled by BHEL,PSSR. • INDIRECT: Activities where BHEL,PSSR can have influence on its control. • NORMAL CONDITION: Risk converted to tolerable/ non-significant condition & does not warrant any special preventive/protective provisions or measures. • ABNORMAL CONDITION: Risk that is beyond tolerance limit and does warrant specific use of preventive/protective provisions or measures • EMERGENCY CONDITION: Risks, which are contained or mitigated by invoking emergency procedures related with potential foreseeable emergency situations. | Core Team |
| 6.1.8 | Prepare a consolidated list of occupational health and safety (OHS) hazards and associated risks in the format HSE – F – HR- 01 /00 | Site Incharge |
| 6.1.9 | Record occupational health & safety (OHS) hazards & associated risks. | HOD /Site I/c |
| 6.1.10 | Conduct site visits to verify the identification of OHS hazards & associated risks. | HOD / Site Incharge / Core Team |

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| HAZARD IDENTIFICATION, RISK ASSESSMENT AND DETERMINING CONTROL | | Sheet No. 3 of 9 |

| Sl. | Activity | Responsibility |
|--------|---|------------------------------------|
| 6.1.11 | Based on the above conduct the feasibility analysis of the significant OHS hazards in the prescribed format (HSE- F- HR – 05/ 00) | MR(HSE)/ Site Incharge / Core Team |
| 6.2 | Evaluation of Occupational Health and safety (OHS) risks and identification of non-tolerable Occupational Health and Safety (OHS) risks. | MR (HSE)/ Site Incharge |
| 6.2.1 | <p>Criteria for risk assessment (refer format HSE-F-HR-02/00) is developed through brain storming and discussion by core team and MR (HSE) which is given below:</p> <p>b. Domino Concern (DC): Operations and processes which can trigger / multiply the risks that are of increasing magnitude and create potential emergency conditions.</p> <p>c. Legislative Concern (LC): Any OHS hazards / risks covered in the identification of OHS hazards and risks by existing and applicable OHS legislation and other notifications issued from time to time</p> <p>d. Any Other : like Chronic Effect (CE) - Any OHS hazards / risks leads to medium and long term adverse OHS effects; Business Concern, etc as decided by MR</p> <p>e. Sc & Se criteria</p> <ul style="list-style-type: none"> • Sc (Scale): Area of spread risk • Se (Severity) : Combination of Likelihood (L) (Refer HSE-F-HR -03/00) and Level of Consequence (c) (refer HSE-F-Hr-04/00) <p>This methodology of risk assessment provides the classification of risks (refer HSE –F- HR- 03/ 00). The above Sc & Se criteria shall be applied as per the rating given in the criteria for risk assessment (refer HSE-F-HR-02/00).</p> | Core Team & MR (HSE) |
| 6.2.2 | <p>While identifying non-tolerable OHS risks consideration shall be given to</p> <ul style="list-style-type: none"> • Chemical hazards • Physical hazards • Biological hazards • Ergonomic hazards • Accidental hazards • Monotonous work • Work at predetermined rate • Influence of shift work • Overtime loading & fatigue, heat exposure etc • Unsafe acts/practices • Applicable legislation / Regulations • Any other (DC, CE, BC etc.) as relevant | Core Team & MR (HSE) |



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**HAZARD IDENTIFICATION, RISK ASSESSMENT AND
DETERMINING CONTROL**

Sheet No. 4 of 9

| Sl. | Activity | Responsibility |
|-------|--|---|
| 6.2.3 | Conduct brainstorming / discussion to apply evaluation criteria for evaluating all identified OHS risks | Core Team/HOD Site I/c / MR(HSE) |
| 6.2.4 | Treat any of the OHS risks falling under DC, LC and 'Any other' as non-tolerable. Any OHS risks falling in to any category other than trivial & moderate shall be treated as non-tolerable risks (Refer format HSE – F- HR- 02 / 00) . Sc & Se score may be used to prioritise amongst the non-tolerable risks. | Core Team / HODs / Site I/c / Head-SAS / MR (HSE) |
| 6.2.5 | Based on the above, prepare a list of non-tolerable OHS risks which shall be considered by organization for setting objectives & targets in first place & or control procedures. | Core Team / HODs / Site I/c / Head-SAS / MR (HSE) |
| 6.2.6 | Prepare a "Register of OHS hazards & associated risks Which shall include : a. Updating sheet. b. List of departments. c. Facility layout chart indicating appropriate OHS issues. d. Prioritisation of non-tolerable OHS risks. e. Identification of OHS Hazards/Risks, Assessment of identified OHS risks and feasibility study for the elimination / reduction / control measures. | MR (HSE) |
| 6.3 | Keep Register Of OHS Hazards & Risks "Up To Date ". | MR (HSE) |
| 6.3.1 | Any new / modified or changed OHS hazards & risks at the existing projects/ regional office, introduction of new activity within the company, changes in the applicable legislation/ regulations shall be identified & included in the register of OHS hazards and associated risks for risk assessment as per the procedure of consultation & communication once in six months or earlier. (OHSAS 18001 clause 4.4.3) | Core Team / HODs / Site I/c / Head-SAS / MR (HSE) |
| 6.3.2 | The OHS hazards & risks of new projects/expansion project shall be identified & included in the "Register of OHS hazards & associated risks" as per the procedure for "consultation and communication". (OHSAS 18001 clause 4.4.3) | - Do - |
| 6.3.3 | The above procedure shall be repeated annually to keep the hazards and associated risks of the organizational activities up to date. | - Do - |


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| HAZARD IDENTIFICATION, RISK ASSESSMENT AND DETERMINING CONTROL | | Sheet No. 5 of 9 |

7. RECORDS:

| Record Title | Location | Responsibility | Retention Time |
|---|-----------------|----------------|----------------|
| Register of OHS hazards and Associated risks. | MR (HSE) office | MR (HSE) | 3 Years |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

MR (HSE) shall ensure the effective implementation of the above procedure and in case of deviations he shall take appropriate corrective and preventive action. The record of deviation and reasons shall be maintained. He shall also undertake periodic site visits to verify whether the register of OHS Hazards and associated risks is kept up to date.

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| HAZARD IDENTIFICATION, RISK ASSESSMENT AND DETERMINING CONTROL | | Sheet No. 6 of 9 |

IDENTIFICATION OF OHS HAZARDS AND RISK / RISK ASSESSMENT / RISK MANAGEMENT MEASURE

Area :

Format No : HSE-F-HR-01 / 00

| RISK IDENTIFICATION | | | | | | | | | | Risk Assessment | | | | Over riding factors (LC / DC/ Any Other) | Risk Control Measures | |
|---------------------|----------|--------|-----------|--------|-----------|------------------|--------------|------------|-------------|-----------------|-----------------------|--------------------------|------------------|--|-----------------------|---------------------|
| SI No | Activity | Hazard | Condition | | | Adequacy Measure | | Risk | | Scale (Sc) | Severity (Se = L x C) | | Total = (Sc+ Se) | | | Risk Classification |
| | | | D/I | R/ N R | N/ A N/ E | Existing | Gaps, if any | Likelihood | Consequence | | Likelihood (L) | Level of Consequence (C) | | | | |
| | | | | | | | | | | | | | | | | |
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HAZARD IDENTIFICATION, RISK ASSESSMENT AND DETERMINING CONTROL

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CRITERIA FOR RISK ASSESSMENT

Format No :HSE-F-HR-02 / 00

| Risk Identification | | | | | Risk Assessment | | | | Over riding factor (LC/ DC/ Any other) | Risk Control Measure | | | | | |
|---------------------|--------|-----------|-------|---------|---------------------|--------------|------------|-------------|--|------------------------|---------------------|------------------|------------------------|-----------|---------------------|
| Activity | Hazard | Condition | | | Adequacy of Measure | | Risk | | | | Scale S | Severity S = LxC | | Total S+S | Risk Classification |
| | | D/I | R/ NR | N/AN /E | Existing | Gaps, if any | Likelihood | Consequence | Likelihood L | Level of Consequence C | | | | | |
| | | | | | | | | | Spot (1) | HUL (1) | SH (1) | | Trivial (2) | | |
| | | | | | | | | | Within Dept (2) | UL (2) | Harmful (2) | | Moderate (3-6) | | |
| | | | | | | | | | Within Factory (3) | Likely (3) | Very Harmful (3) | | Substantial (7-12) | | |
| | | | | | | | | | Outside Factory (4) | Very Likely (4) | EH (4) | | Intolerable (13-20) | | |

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RISK LIKELYHOOD

Format No :HSE-F-HR-03 / 00

| Weightage | Probability | Risk Likelihood |
|-----------|----------------|-----------------------|
| 1. | > Month | Highly Unlikely (HUL) |
| 2. | ≤ Month > Week | Unlikely (UL) |
| 3. | ≤ Week > Day | Likely (L) |
| 4. | ≤ Day | Very Likely (VL) |

DETERMINING RISK CONSEQUENCY LEVEL – GUIDANCE CRITERIA

Format No :HSE-F-HR-04 / 00

| Level of Harm | Human | Property | Exposure level |
|-------------------|--|-------------------------------------|--|
| Slightly Harmful | Momentary Discomfort | No action required | Below / equal to prescribed TLV (8 hrs) |
| Harmful | Minor injuries (Non reportable) requires fast-aid | Minor damages | Above than prescribed TLV (8 hrs); however < 20% |
| Very Harmful | Major injuries, absence from the work ≥ 48 hrs / temporary disability | Severe damages | Above than prescribed TLV (8 hrs); however within 20% - 40% |
| Extremely Harmful | Fatal / Permanent Disability. Major incidents involving large number of people | Annihilation (complete destruction) | Above than prescribed TLV (8 hrs); AND > 40% |



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FEASIBILITY ANALYSIS OF NON-TOLERABLE OHS RISKS

Format No :HSE-F-HR-05 / 00

| S. No | Activity / product / Service | OHS Hazard | Non-Tolerable OHS risk | Hazard Management Measures Required to | | | | Operational Feasibility | Economic Viability | Elimination / Reduction / Control | Ref. Doc |
|-------|------------------------------|------------|------------------------|--|------------------------|-------------------|----------------------|-------------------------|--------------------|-----------------------------------|----------|
| | | | | Eliminate or Reduce | | | Control | | | | |
| | | | | Techn-ology | Physical Improve ments | Feasibility Study | Technique / Training | | | | |
| | | | | | | | | | | | |

Technology

- Whether new technology or modification in the present technology required

Physical improvement

- Whether new physical construction or modification in the present physical condition required

Feasibility study

- Whether feasibility study is required to identify the possible solution

Operational feasibility

- Whether proposed measure shall be operationally feasible

Economic viability

- Whether proposed measure shall be economical viable



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LEGAL AND OTHER REQUIREMENTS / EVALUATION OF COMPLIANCE

Sheet No. 1 of 3

1. PURPOSE:

To lay down a system to identify, provide for communication to interested parties, have access to all relevant legal and other HSE legislation & keep them up to date and identify the procedure for evaluation of compliance with respect to legal and other requirements.

2. SCOPE:

Applicable to all HSE related activities, products and services, conditions and facilities of BHEL, PSSR

3. RESPONSIBILITY:

MR (HSE)

4. PERFORMANCE CRITERIA:


An updated Register of applicable HSE Legislation.

5. CROSS REFERENCE:

- ISO-14001, Clause – 4.3.2 – Legal & Other requirements.
- ISO-14001, Clause – 4.5.2 – Evaluation of compliance
- ISO-14004, Clause – 4.3.2 – Legal & Other requirements
- OHSAS – 18001, Clause – 4.3.2 – Legal & other requirements.
- OHSAS – 18002, Clause – 4.3.2 – Legal & other requirements
- Records of past correspondence of HSE legislation / regulation with interested parties especially from legislation enforcement authorities.

6 PROCEDURE:

| Sl. | Activity | Responsibility |
|------------|---|-----------------------|
| 6.1 | Prepare a list of all applicable legislations after studying the relevant Documents/ websites as listed below : * Guidelines issued by MoEF (Ministry of Environment & Forest) * Pollution control Act, Rules & Notifications – CPCB * Environmental legislation Update News Letter. * Any other communication from regulatory body especially of SPCB * Directorate of Factories/ Labour / Industries and other. * Corporate requirement on HSE related matters. * Relevant Acts and Rules. | MR (HSE) / HR |


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| LEGAL AND OTHER REQUIREMENTS / EVALUATION OF COMPLIANCE | | Sheet No. 2 of 3 |
| Sl. | Activity | Responsibility |
| 6.2 | Consolidate the list of applicable regulatory & corporate Requirement in the form of “Register of HSE Legislation & Regulation” as applicable to the operation of BHEL, PSSR. The register shall consist of : <ul style="list-style-type: none"> • Updating Sheet • List of corporate requirements, if any. • Verification of compliance with respect to procedural requirements & Prescribed standards. • Record Upkeep • Annexure. | MR (HSE) / Site Incharge/ /HR |
| 6.3 | The changes in the regulatory requirements shall be identified through: <ul style="list-style-type: none"> • Gazette notifications, Notices received from the regulatory bodies. • Announcement in newspapers/magazines. • Communication with regulatory bodies Factory Inspector/ Chief Controller of Explosives/ MoEF/ SPCB/CPCB/ and others. • Quarterly Environmental legislation update newsletter. Communication to concerned departments about The changes / amendments to be carried out / Implementation | MR (HSE) / Site Incharge/ HR |
| 6.4 | REVIEW & UPDATION : The Register of Regulations shall be reviewed and updated at least once in a <i>year</i> or whenever there is a change of <i>any of</i> the contents, whichever is earlier. <i>Such updation shall be communicated to the concerned departments.</i> Notifications & Publications received from various agencies from time to time are reviewed for any changes in the applicable Legislations / Regulations. Information on any changes in the same are also obtained by interacting with PCB through letters, visits or over telephone at least twice a year, or through information collected from relevant journals / news letters | MR (HSE)/HR |
| 6.5 | In case any changes to be incorporated due to changes in legal and other requirements with regard to the existing OCP’s the same shall be decided and communicated to the concerned within a month. | MR (HSE)/HR |
| 6.6 | The evaluation of compliance with respect to legal and other requirements shall be monitored through the register of regulations (HSE/SR/04) any new change in the law shall be communicated to the concerned department in the prescribed format (Format No. HSE-F-11-01/00) and monitored for its compliance. | MR (HSE)/HR |

7. RECORDS :

| Record Title | Location | Responsibility | Retention time |
|--|-----------------|----------------|----------------|
| Register of applicable HSE Legislation and Regulation. | MR (HSE) Office | MR (HSE)/HR | Continual |
| Records of compliance to new requirements | MR (HSE) office | MR (HSE)/HR | Continual |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION :


MR (HSE) shall verify the validity of register once in a year by interaction with regulatory agencies and shall inform concerned for any deviations noticed and corrective preventive action to be taken.

| | | |
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| LEGAL AND OTHER REQUIREMENTS / EVALUATION OF COMPLIANCE | | Sheet No. 3 of 3 |

Brief note on new applicable laws and its compliance monitoring

Format No. HSE-F-11-01/00

| | | | |
|--|----------------|----------------------|--|
| To: | | From: | |
| Date of Action Note | | | |
| 1. Reference Notification No. | | Date of Notification | |
| 2. Brief of Application Provision (Refer copy of Notification/ Directive, enclosed with the note) | | | |
| 3. Action to be taken | Responsibility | Completion Time | |
| 4. Closing Report by Concerned manager after taking action | | | |
| Signature : | | | |
| 6. Review by MR for of adequacy of Closing Report and date | | | |
| Signature: | | | |
| Copy : | | | |

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|  | OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL | Doc.No. HSEMSM-12 |
| | | Rev. No. 03 Date : 15.12.2008 |
| OBJECTIVES, TARGETS AND PROGRAMME (S) | | Sheet No. 1 of 3 |

1. PURPOSE:

To establish documented HSE objectives considering the results of Environmental Aspects / OHS Risks Assessment at different level and functions of the organization.

2. SCOPE:

Applicable to all environmental aspects and OHS hazards / Risks of its activities, products and services of BHEL, PSSR

3. RESPONSIBILITY:

MR (HSE)

4. PERFORMANCE CRITERIA:


An updated master list of HSE objectives and targets.

5. CROSS REFERENCE:


- ISO-14001 : 2004 – Clause – 4.3.3 objectives, targets and programmes.
- ISO-14004 : 2004 – Guidelines for implementation of ISO-14001
- OHSAS – 18001 (2007), Clause – 4.3.3. : Objectives.
- OHSAS - 18002 (2007), Guidelines for implementation of OHSAS-18001
- Register of HSE Legislation and Regulations.
- Register of Occupational Health & Safety (OHS) Hazards & associated risks.
- Register of Environmental Aspects and associated Impacts.
- HSE Policy.

6 PROCEDURE

| Sl. | Activity | Responsibility |
|-----|---|--|
| 6.1 | METHODOLOGY FOR IDENTIFICATION OF OBJECTIVES & TARGETS: The HSE objectives are the goals of the Unit established to meet the HSE policy. These shall be identified from the following situations: | HODs/ Site Incharge/ Core Team/ MR (HSE) |

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| OBJECTIVES, TARGETS AND PROGRAMME (S) | | Sheet No. 2 of 3 |

| | | |
|--|---|--|
| | <p>CASES OF PHYSICAL IMPROVEMENT :</p> <p>Based on HSE reviews carried out, the areas for physical improvements are identified and the objectives set.</p> <p>FEASIBILITY ANALYSIS ON THE SIGNIFICANT IMPACTS/ NON-TOLERABLE RISKS:</p> <p>After identifying the significant aspects and impacts /non-tolerable OHS hazard and risk for any activity, product or service, further analysis shall be done as described below, by the HOD or his nominated representatives to determine whether the significant impact can be eliminated, reduced or controlled.</p> <p>ELIMINATION / REDUCTION :</p> <p>In case the significant impact/ non tolerable Risk can be eliminated or reduced, that shall be done through any of the following steps:</p> <ul style="list-style-type: none"> * By a change in the technology, • By physical improvement. <p>For any technological change or physical improvement identified, the operational feasibility or economic viability shall be studied.</p> <p>A feasibility study shall be taken up, if there is no solution readily known through any technological change or physical improvement. Once the feasibility study is done, further course of action shall be determined whether to eliminate, reduce or control the significance of the impact.</p> <p>CONTROL :</p> <p>In case the significance of the impact/ Non-tolerable risk is not possible to be eliminated or reduced, control shall be introduced into the presently followed system to reduce the significance of the impact/ level of risk. This control can be instituted by means of training or other alternate technique(s).</p> | |
|--|---|--|

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| OBJECTIVES, TARGETS AND PROGRAMME (S) | | Sheet No. 3 of 3 |
| 6.2 | <p>SETTING OF ENVIRONMENTAL OBJECTIVES AND TARGETS :</p> <p>The HSE objectives and targets shall be set by the MR (HSE) in consultation with Core Team / HODs/ Site Incharges/Head-SAS concerned, in such a way that it reflects the intention of elimination, reduction or control of the identified significance of the environmental impacts/OHS Hazards & Risks. The targets shall be specific, time bound and quantified to the extent possible. While setting the targets, HSE performance indicators shall be provided. The indicators can be used as a guide to the HSE performance evaluation system and operational system. Certain objectives and targets applicable to the whole region of PSSR shall be fixed by CEO.</p> <p>The HSE objectives and targets shall be reviewed and ratified by the MQC.</p> | MR (HSE) & HODs/ Core Team Site Incharge/ Head-SAS |
| 6.3 | <p>REVIEW OF OBJECTIVES AND TARGETS :</p> <p>The monitoring and review of the objectives and targets shall be done by the MR (HSE) at least once in six months.</p> <p>New HSE objectives and targets shall be fixed by the HODs / Site Incharge / Head-SAS in consultation with MR (HSE) based on the review or on the directive of MQC.</p> | MR (HSE) & HODs/ Core Team Site Incharge/ Head-SAS |
| 6.4 | <p>Environment – Objectives.</p> <ol style="list-style-type: none"> 1. To prevent Land Contamination 2. To reduce Resource Losses 3. Green Tree Plantation 4. To contain / Control Significant Environmental Aspects | MR (HSE) & HODs/ Core Team Site Incharge/ Head-SAS |

7.0 RECORDS :

| Record Title | Location | Responsibility | Retention time |
|---|----------------|----------------|----------------|
| Master list of HSE Objectives & targets | MR(HSE) Office | MR(HSE) | 3 Years |
| Register for Environmental Aspects/Impacts. | MR(HSE) Office | MR(HSE) | 3 Years |
| Register for OHS Hazards/ Risks. | MR(HSE) Office | MR(HSE) | 3 Years |

8.0 VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

MR (HSE) must ensure the effective implementation of above procedure. In case of deviation, he will take appropriate corrective and preventive action. MR / HSE Coordinator shall keep a record of all such actions initiated.



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OBJECTIVES AND PROGRAMME (S)

Sheet No. 1 of 3

1. PURPOSE :

To establish & maintain Environmental, Occupational Health & Safety Management Programme(s) (HSEMP) to achieve stated objectives & targets at relevant levels and functions.

2. SCOPE:

Applicable to documented objectives/ targets of HSE related activities, products and services, conditions and facilities of BHEL, PSSR

3. RESPONSIBILITY:

MR (HSE), HODs/ Site Incharges / Head-SAS

4. PERFORMANCE CRITERIA:


An updated “Master List of HSE Management Programme(s)”.

5. CROSS REFERENCES:

ISO-14001, Clause – 4.3.3 Objectives, targets and Programmes
 ISO-14004, Clause – 4.2.6 Environmental Management Programme(s)
 OHSAS – 18001, Clause- 4.3.3 – OHS Management Programme(s)
 OHSAS – 18002, Clause- OHS Management Programme(s)
 Updated “Master List of HSE objectives and targets.”
 Register of Environmental Aspects & Associated Impacts.
 Register of OHS Hazards & Associated Risks.

6. PROCEDURE

| Sl. | Activity | Responsibility |
|------------|--|--------------------------------|
| 6.1 | On the basis of objectives and targets set, HSE Management Programme shall be prepared by each HOD / Site Incharges / Head-SAS in the prescribed format (HSE-F-13-01/00). HSE Management programme shall reflect HSE action plan for associated activities along with the designated responsibility & completion date. Whenever desirable & or necessary to consult MR (HSE)/ MQC for formulation/ Revision/approval of the action plan. | HOD / Site Incharge / Head-SAS |
| 6.2 | HODs / Site Incharges / Head-SAS have overall responsibility of implementation of the programme and shall monitor progress of HSE Management Programme on regular basis and report” to MR(HSE) as an input for Management review. | HODs/ Site Incharge / Head-SAS |

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| OBJECTIVES AND PROGRAMME (S) | | Sheet No. 2 of 3 |


| Sl. No. | Activity | Responsibility |
|---------|---|--------------------------------|
| 6.3 | The request for revision or changes shall be made to MR (HSE) & he may permit changes based on new development or modified activity or operating condition and or it may be kept for MQC decision. | HODs/ Site Incharge / Head-SAS |
| 6.4 | Every HSE Management Programme shall include an auditable performance indicator against which progress of HSE Management Programme shall be measured/assessed. | HODs/ Site Incharge / Head-SAS |
| 6.5 | A typical list of OHSAS Objectives are : a) To contain / Control Non Tolerable Occupational Hazards b) To Establish Pre Employment and Post Employment Medical check up (Periodic) of Contract Employees c) To establish more awareness on applicable HSE Legislations. | |

7. RECORDS:


| Record Title | Location | Responsibility | Retention time |
|---|-------------------|----------------|----------------|
| Master List of HSE Objectives | MR(HSE) Office | MR (HSE) | 3 Years |
| Master List of HSE Management Programme | MR(HSE) Office | MR (HSE) | 3 Years |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

MR (HSE) shall ensure effective implementation of HSE Management Programme(s). He shall take necessary corrective & preventive action in case of deviation. Concerned Site Incharge / HOD shall submit a quarterly HSE Management Programme(s) progress report to MR(HSE).


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Format No HSE-F-13-01/00.

| | | | | |
|---|--|-----------------------|-----------------------------------|------------------------|
|  | POWER SECTOR – SOUTHERN REGION HSE MANAGEMENT PROGRAM | | | HSE MP : |
| | | | | Rev.No. 00 |
| | | | | Date: |
| Department / Site: | | | STATUS REPORT NO. | |
| Overall responsibility: | | | HQ : | |
| 1 | OBJECTIVE: | | | |
| 2 | TARGET (s) | | | |
| 3 | SCOPE | | | |
| 4 | PERFORMANCE INDICATOR | | | |
| 5 | ACTION PLAN: | | | |
| Sl.No | ACTIVITY | RESPONSIBILITY | RESOURCES CONSUMED (ITEMS) | COMPLETION DATE |
| | | | | |
| Prepared By: | | | Approved By: | |
| HSE Representative | | | HOD/Site Incharge /Head-SAS | |

DATE OF REPORT:

Copy to: 1. Management Representative (HSE)

| | | |
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| | | Rev. No. 03 Date : 15.12.2008 |
| RESOURCES, ROLES, RESPONSIBILITY ACCOUNTABILITY AND AUTHORITY | | Sheet No. 1 of 8 |

1. PURPOSE :

- To define resources, roles, responsibilities , accountability and authority and communicate effective functioning of HSEMS.
- To provide essential inputs for the implementation & control of HSEMS.
- To appoint MR(HSE) for effective design, implementation & maintenance of HSEMS.

2. SCOPE:

Applicable to all activities, products & services of BHEL,PSSR.

3. RESPONSIBILITY:

- Define roles , responsibility , accountability & authority – CEO
- Provide resources - CEO
- Appoint MR (HSE) - CEO

4. PERFORMANCE CRITERIA:


- Defined resources, roles , responsibility, accountability and authority.
- Office Order on the of appointment of MR (HSE)
- Circular of MQC committee.

5. CROSS REFERENCES:

- ISO-14001: (2004) : Clause 4.4.1 on Resources, Roles, Responsibility and Authority
- ISO-14004 (2004) : Clause – 4.4.1
- OHSAS – 18001 (2007) : Clause – 4.4.1 on Resources, Roles, Responsibility, Accountability and Authority
- OHSAS – 18002 (2007) : Clause – 4.4.1
- HSE Policy.

6. ORGANIZATION:

The organization structure of BHEL, PSSR is operated and maintained in such a way that an effective guidance is provided to all functions/ levels for operation of HSE-MS. Clear lines on resources to be provided, roles, responsibility, accountability and authority are assigned and communicated as mentioned below in addition to their respective QMS/ departmental procedures, in order to ensure effective HSE management system.

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7. PROCEDURE : ROLES / RESPONSIBILITIES / ACCOUNTABILITY / AUTHORITY for the various Functions / Roles are given below (for the purpose of HSEMS)

7.1 CEO/PSSR.

- ❖ To appoint MR (HSE) for HSEMSM (ISO-14001 plus OHSAS-18001).
- ❖ Direct Site I/c / HODs / MR (HSE) in setting up Objectives / Targets
- ❖ To give strategic direction in all the issues related to Health , Safety and Environment,
- ❖ Define roles, responsibilities , accountability and authorities.
- ❖ Approve HSE policy & objectives. Make a continuous follow up through reviews on progress / compliance of HSEMSM towards achievement of the same
- ❖ Conduct management reviews for ISO 14001 & OHSAS 18001 as per the procedure ref. HSEMSM-4.6
- ❖ Approve the necessary resources (the resources may include human resource, specialized skills, organizational infrastructure, technological and financial resources) to implement HSE programs.

7.2 Site I / c / HODs / Head-SAS

- ❖ Identify Aspects / Impacts and Hazards and risks on a continual basis wherever found necessary over and above what has been addressed in the level II documents
- ❖ Evaluate the Significant aspect & impact & Non tolerable Hazards & risks to establish Operational Control Procedure & Management Programme.
- ❖ Assist MR (HSE) in setting up Objectives / Targets
- ❖ Establish Emergency preparedness & response plan wherever found necessary over and above what has been addressed in the level II documents.
- ❖ Implement Management Programmes / Monitoring & Measurement of Objectives & Targets.
- ❖ Preparation / implementation of Operational Control Procedures..
- ❖ Implementation of HSE MSM in Site / Departmental activities
- ❖ Undergo Internal & External HSE Audits / Take corrective & preventive actions / Report to MR(HSE)
- ❖ Maintain records of HSEMS.
- ❖ Provide all resources / requirements which may include.
 - Human
 - Skills
 - Technical
 - Financial & others
- ❖ Sending reports on the progress / completion of HSE MP
- ❖ Interact with Statutory / Regulatory Authorities wherever required
- ❖ .Identification of training needs & implementation of Training Programmes(Head/HR under the direction from Training Committee)
- ❖ Gradual Establishment of Green Supply Chain (Head / P & S)

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7.3 MR (HSE)

In addition to his present responsibilities & authorities, Management Representative (HSE) who acts as MR for ISO-14001:2004 and OHSAS-18001: 2007 ensures that HSEMS requirements are established Implemented & maintained in accordance with HSEMS Standards through the following.

- ❖ Issue HSEMSM Documents (Level 1, Level II and Level III Documents) / Document Control
- ❖ Develop, review, revise & issue the HSEMS.
- ❖ Set objectives / Targets in consultation with Site Incharge / HOD / Core Team/ Head - SAS
- ❖ Identify & have access to legal and other requirements.
- ❖ Advise and approve new processes, activity or equipment related to HSE impact.
- ❖ Communicate established HSEMS to all concerned at respective areas.
- ❖ Interaction / Correspondence with HSE certification agency
- ❖ Identifying internal auditors & providing training.
- ❖ Conduct internal HSEMS Audits. / Organise for External Audits through Certifying Body / Assist in the Closure of Non conformities through corrective / preventive actions
- ❖ Ensure the overall compliance of company's HSE Policy.
- ❖ The defined role, responsibility , accountability and authority shall be communicated through HSE Management System Manual distribution, Circulars and also by displayed at Notice Board
- ❖ Maintaining national & international standards through concerned Departments.
- ❖ Maintain records of HSEMS
- ❖ Reporting on the performance of HSEMS to Management.

7.4 CORE TEAM

- ❖ Initial review, identification of Aspects / Impacts and Significant Aspect & Impact / Hazards / Risks and Non tolerable Hazards & Risks.
- ❖ Assist MR (HSE) in setting up Objectives / Targets
- ❖ Evaluate the Significant Aspect & Impact and Non tolerable Hazards & Risks to establish Operational Control procedure & Management Programs.
- ❖ Define objectives & targets & programmes.
- ❖ Monitoring & Measurement of Objectives & Targets
- ❖ Analyze Audit outcome / injury trends to further enhance HSEMS
- ❖ Provide guidance to MR (HSE) / Management in overall compliance of HSEMS


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7.5 HSE CO ORDINATOR / HSE CONSULTANT ENGINEER (OUT SOURCED)

- ❖ To advice and assist the Site Management in the overall compliance of HSE MS
- ❖ To assist Area in charges in the identification of Aspects / Impacts and Hazards / Risks and in the designing of related OCPs and HSE MPs.
- ❖ To ensure maintenance of a safe working environment
- ❖ To advice the concerned Departments in the site in planning and organising measures necessary for the effective control of Environmental Pollution / Personal injuries
- ❖ To check and evaluate the effectiveness of the action taken or proposed to be taken to prevent Environmental Pollution / Personal injuries
- ❖ To advise on safety aspects in all jobs and to carry out detailed job safety studies of selected jobs
- ❖ To advise the Stores Department in ensuring the availability of standard personal protective equipment (PPEs)
- ❖ To advice on matters related to carrying out Plant Safety Inspections
- ❖ To carry out Plant Safety Inspections in order to observe the physical conditions of work and the work practices and procedures followed by the workers and to render service on measures to be adopted for removing unsafe physical conditions and preventing unsafe actions by workers
- ❖ To render advice on matters related to reporting and investigation of industrial accidents and diseases
- ❖ To design and conduct suitable training and educational programmes in consultation with the site management for the prevention of personal injuries
- ❖ To report to HQ through Site I/c / HOD on the HSE Issues / performance
- ❖ To assist Area In charges in designing and implementing Energy Conservation / Total loss control activities.
- ❖ To organise for Mock Fire Drills & Safety Drills
- ❖ To organise for periodic inspection of Safety Equipments including Tools & Plants
- ❖ To spread the awareness on the compliance of HSE Regulations / Rules / Acts.
- ❖ To organise for Training on HSE aspects in co ordination with HQ


7.6 PART TIME MEDICAL OFFICER:

- ❖ To advice Management on Occupational Health Hazards and tests to be conducted
- ❖ Ensuring availability of Health Records to Employees of the Organisation
- ❖ To provide resources to the employees in the form of recommendations / approvals to facilitate required Occupational Health medical check ups and follow up clinical care
- ❖ Maintains Health records of the Employees

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7.8 WELFARE OFFICER:

- ❖ To establish contacts and hold consultations with a view to maintaining harmonious relations between the site management and workers
- ❖ To bring to the notice of site management, the grievances of workers, individual as well as collective, with a view to securing their expeditious redress and to act as a Liaison Officer between the management and labour
- ❖ To study and understand the point of view of labour in order to help the site management to shape and formulate labour policies and to interpret these policies to the workers in language they can understand
- ❖ To advise on the fulfilment by the concerned Departments of the site management obligations statutory or otherwise concerning the applications of the provisions of the Factories Act, 1948 and the Rules made there under and to establish liaison with the Inspector of Factories, and the Medical Services concerning medical examination of employees, health records, supervision of hazardous jobs, and convalescence, accident preventive and supervision of safety committees, systematic plant inspection, safety education, investigation of accidents, maternity benefits and workmen's compensation
- ❖ To encourage provision of amenities such as canteens, shelters for rest, crèches, adequate latrine facilities, drinking water, sickness and benevolent scheme payments, pension and superannuation funds, gratuity, payments, granting of loans and legal advice to workers
- ❖ To suggest measures which will serve to raise the standard of living of workers and in general, promote their well being

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7.9 SAFETY COMMITTEE (Consisting members from BHEL and Contractors)

- ❖ Safety Committee shall meet as often as necessary but at least once in a Month.
- ❖ Safety committee shall have the right to be adequately and suitably informed of the following
 - a) Potential safety and health hazards to which the workers may be exposed at workplace.
 - b) Data on accidents as well as data resulting from surveillance of the working environment and of the health of workers exposed to hazardous substances so far as the Site / factory is concerned
 - c) To use the data on a confidential basis and solely to provide guidance and advice on measures to improve the working environment and the health and safety of the workers.
- ❖ Function and duties of the Safety committee shall include-
 - a) Dealing with all matters concerning health; safety and environment and to arrive at practicable solutions to problems encountered ;
 - b) Creating safety awareness amongst all workers;
 - c) Discussing reports on safety, environmental and occupational health surveys, safety audits, risk assessment, emergency and disaster management plans and implementation of the recommendations made in the reports
 - d) Carrying out health and safety surveys and identify causes of accidents ;
 - e) Looking into any complaint made on the likelihood of an imminent danger to the safety and health of the workers and suggest corrective measures
 - f) Reviewing the implementation of the recommendations made by it.
 - g) Establish sub-committees as may be required to assist it.

7.10 CONTRACTORS.

- ❖ Comply with the HSE policy and HSE MS of BHEL/PSSR and of the Occupier.
- ❖ Following of Operational Control Procedures (OCPs) and dos and Don'ts
- ❖ Reporting of unsafe acts and conditions and taking up required corrective and preventive actions

- ❖ Arranging for the periodical Occupational medical check up of their employees and submitting Health Records / To take corrective action as per the recommendations

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7.11 OCCUPIER:

- ❖ Every occupier shall ensure, the health, safety and welfare of all workers while they are at work in the site / Ensure that conducive working environment is provided.
- ❖ To ensure that the provision and maintenance of plant and systems of work in the factory that are safe and without risks to health, safety and Environment.
- ❖ The arrangement in the site for ensuring safety in connection with the use, handling, storage and transport of articles and substances;
- ❖ The provision of such information, instruction, training and supervision as are necessary to ensure the health and safety of all workers at work;
- ❖ The maintenance of all places of work in the Site / factory in a condition that is safe and without risks of health .
- ❖ The provision , maintenance or monitoring of such working environment in the site for the workers that is safe, without risks to health and adequate as regards facilities and arrangements for their welfare at work.
- ❖ Except in such cases as may be prescribed, every occupier shall prepare, and, as often as may be appropriate, revise, a written statement of his general policy with respect to the health and safety of the workers at work and the organization and to bring the statement and any revision thereof to the notice of all the workers in such manner as may be prescribed.


Note: The authority to get the task completed as identified in the above roles and responsibilities lies with the immediate senior of the person in question. The unit head hold the ultimate authority for the compliance to the roles and responsibilities of all departments and individuals.

8 RECORDS.

| Record Title | Record No. | Location | Responsibility | Retention Time |
|--|------------|----------------|---------------------|----------------------------|
| Office Order for Appointment of MR(HSE) | File: HSE | MR(HSE) Office | MR (HSE) | 3 Years |
| Organizational roles & responsibility Chart. | HSE MSM | MR(HSE) Office | HOD / Site Incharge | 3 Years |
| Personnel Manual | ----- | HR Dept | Head / HR | As per Corporate directive |

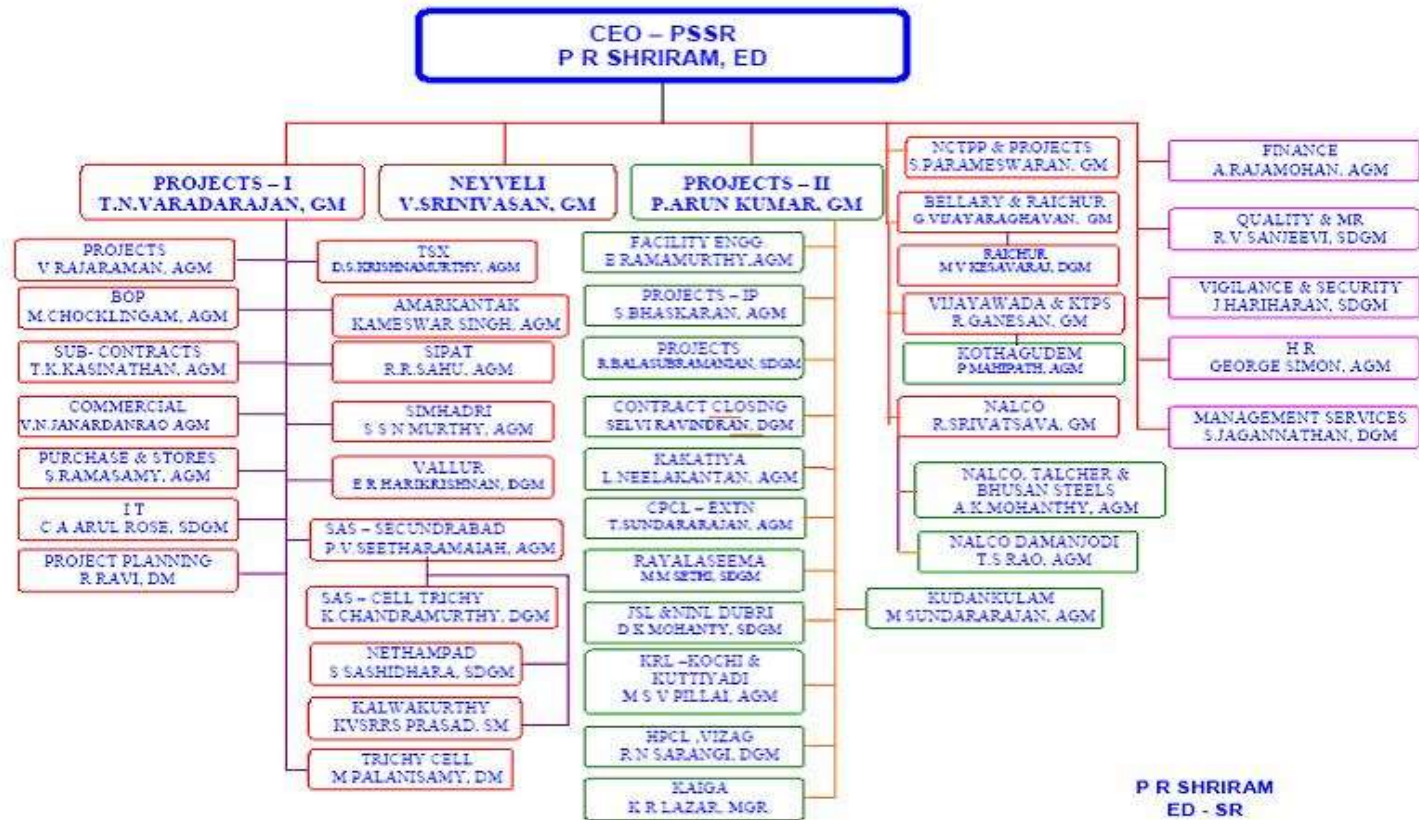
9.0 VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION


MR (HSE) shall update changes in the management of Resources, Roles, Responsibility, Accountability and authority as and when required.

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ORGANISATION CHART OF BHEL - PSSR

Enclosed



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| COMPETENCE, TRAINING AND AWARENESS | | Sheet No. 1 of 3 |

1. PURPOSE:

To lay down the guidelines for identification of competence level, training needs and providing appropriate training to all persons under the control of BHEL, PSSR to ensure effective implementation of HSEMS.

2. SCOPE:

Applicable to all HSE related activities, products & services, conditions & facilities of BHEL, PSSR.

3. RESPONSIBILITY:

Training committee, Head / HR and Management Representative


4. PERFORMANCE CRITERIA: Training Records.

5. CROSS REFERENCES:

- ISO 14001: 2004 clause – 4.4.2, Competence, training and awareness
- OHSAS-18001 - 2007, Clause 4.4.2, Competence Training and Awareness
- QMS/SR/03: Standard procedure for Training

6. PROCEDURE

| Sl. | Activity | Responsibility |
|-----|---|---|
| 6.1 | The HSE related training needs of all persons of function/dept/site which are under control performing tasks should be identified from the register of Environmental Aspects/Impacts & OHS Hazards/Risks and also in consultation with concerned | HODs/Site Incharges/ Head-SAS / Head -HR / Training Committee. |
| 6.2 | Based on the requirement/needs , the persons will be Imparted training by in-house training programme/external Training programme through preparation of training Calendar | - Do - |
| 6.3 | <p>The HSE related training shall generally comprise of the following areas:</p> <ul style="list-style-type: none"> • General awareness , roles of all persons , responsibilities, accountability and authority in achieving conformance with HSE policy, objectives & targets as per HSE-MS. • Relevant HSE rules & regulations. • Significant Environmental aspects/impacts & non-tolerable / non acceptable OHS Hazards/Risk of their activities on HSE & methods of reducing the related impacts and risks. • Non-conformance observed during Management audits and Incident investigation. • HSE benefits to individuals and the society of improved personal performance. • Consequence of not following documented HSE procedures. | HOD(HR) |

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| COMPETENCE, TRAINING AND AWARENESS | | Sheet No. 2 of 3 |
| Sr. | Activity | Responsibility |
| 6.4 | <p>The HSE Training calendar /Plan will be developed annually (beginning of each year) & reviewed periodically (at least once in six months) by the Head / HR & MR (HSE) to monitor progress of implementation, & will be updated/revised as and when required. The Training calendar /Plan for each year will consist of the following types of training implemented under Phase 1 and Phase 2.</p> <p><u>PHASE 1</u></p> <p>HSE Awareness Training (Mandatory to existing employees, including new recruits and contractors and persons under their control).</p> <ul style="list-style-type: none"> ❖ HSE Policy & Objectives. ❖ Applicable Regulatory/Legislative requirements. ❖ HSE requirements that are conditions of employment ❖ Significant environmental aspects/impacts and occupational hazards/risks of their work activities and the HSE benefits of improved personal performance. ❖ Roles, Responsibilities, Accountability and Authority in achieving conformance with the HSE policy & HSE Management System. ❖ HSE Management Programmes, Operation Control Procedures & Emergency Preparedness and Response requirements. ❖ The potential consequences of deviation from specified operating procedures. <p><u>PHASE 2</u></p> <p>Specific Training for</p> <ul style="list-style-type: none"> ❖ Relevant Legislations & Regulations detailing specific clauses ❖ Applicable Operational Control Procedures ❖ Significant environmental impacts & occupational hazards/risks of their work activities & the HSE benefits of improved personal performance. ❖ Preventive & Control Measures/Technique. ❖ Emergency Preparedness and Response including drills conducted.. ❖ HSE MSM Auditors / Lead Auditors training ❖ In addition to the above, Safety week is celebrated every year in the month of in all sites/Offices to bring in more and more awareness on HSE MSM <p>Training Needs Identified through Environmental Aspects/ Impacts, OHS hazards/Risks , taking into account differing levels of responsibility, ability and literacy & HOD Feedback.</p> | <p>Training Committee, Head / HR & MR (HSE)</p> <p>Training Committee, Head / HR & MR (HSE)</p> <p>Training Committee, Head / HR & MR (HSE)</p> |

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| Sl. | Activity | Responsibility |
|-----|--|----------------|
| 6.5 | Training Effectiveness Evaluation to be done in accordance with QMS/SR/03 | HOD/HR |
| 6.6 | Necessary training records will be maintained for all employees. | HOD/HR |
| 6.7 | Competence records of supervisors/workers will be maintained for ensuring that workers working in areas having significant environmental impacts and OHS hazards are competent enough to carry out the tasks. (NOTE: QMS/SR/03/Rev 01 to be referred .for all the above including developing job specific competency matrix for all the employees.) | HOD/HR |

7. RECORDS.

| Record Title | Location | Responsibility | Retention Time |
|--|-----------|--|----------------|
| Training record | HR Office | HOD(HR) | 3 Years. |
| Training need identification / Training calendar | HEAD (HR) | Training Committee, Head / HR & MR (HSE) | 3 years |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

The effectiveness of the training at providing awareness, knowledge, skills or behavioural change will be evaluated by quiz programs during the training sessions, HSE audits and reduction in incidents and the overall reduction in non-conformance.

Site Incharges / HODs must ensure the effective implementation of above procedure. In case of deviation, this group will take appropriate corrective and preventive action. MR(HSE) shall keep a record of all such actions initiated.



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COMMUNICATION / COMMUNICATION, PARTICIPATION & CONSULTATION

Sheet No. 1 of 4

• PURPOSE:

To lay down procedures for internal communication among the various levels and functions of the organisation and communication with contractors and other visitors to the workplace and on participation and involvement of workers and contractors in the implementation of HSE Management system

• SCOPE:

Applicable to all HSEMS related activities, products, services, conditions & facilities at BHEL, PSSR.

• RESPONSIBILITY:

- Internal communication - HODs/Site I/c, Head-SAS ,MR (HSE) and Site HSE Co-ordinators
- External Communication - Site I/c, HODs, Head – SAS and MR (HSE)
- Participation & Consultation- Workers & Contractors

• PERFORMANCE CRITERIA:

- Register / File of internal communication.
- Register/ File of external communication.
- Register / File of inputs from workers & contractors

• CROSS REFERENCES:

- ISO-14001 : 2004: Clause – 4.4.3, Communication
- ISO-14004 (2004): Clause – 4.4.3.1 Communication
- OHSAS-18001(2007): Clause – 4.4.3, Communication, participation & consultation
- OHSAS-18002(2007): Clause – 4.4 .3 Communication, participation & consultation

6. PROCEDURE

| Sr. | Activity | Responsibility |
|-----|--|--|
| 6.1 | <p>Participation & Consultation</p> <p>Suggestion Scheme / IMPRESS scheme is available through which all employees are participating / consulted for better HSE performance and continual improvement. The Contractors / workers shall be made to participate / consulted for Hazard Identification, Risk assessment, determining controls, to improve in the areas of HSE policies & Objectives, incident investigation.</p> | <p>HODs/ Site Incharge/ Head-SAS</p> |



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**COMMUNICATION / COMMUNICATION,
PARTICIPATION & CONSULTATION**

Sheet No. 2 of 4

| Sl. | Activity | Responsibility |
|------------|---|---------------------------------------|
| 6.1 | Internal HSE Communication | Site Incharge/ HODs / Head-SAS/ |
| 6.1.1. | Internal communication will be done through: <ul style="list-style-type: none">• Display of HSE policy at prominent places and available through cards.• Training courses/workshops / Pep talks / Tool box meeting• Circular on notice board;• Any other relevant HSE related information. All employees can inform their HSE suggestions/complaints/concerns verbally or by writing to HODs /Site Incharges /Head-SAS/ HSE coordinator. | |
| 6.1.2 | HSE Policy will be communicated to all employees / Contractors / Workers through training / displaying at various prominent locations. | MR(HSE)/ Site Incharge/HODs |
| 6.1.3 | Recommendations / Feedbacks received through MQC meeting, internal HSE audit and periodic environment & safety rounds of site shall be verified / implemented. | Site Incharge / HODs |
| 6.1.4 | Findings of all audits will be communicated to all HODs/ Site I/c & Head-SAS. | MR (HSE) |
| 6.1.5 | Action taken on the audit findings will be communicated to the MR(HSE) for follow up and records. | HOD, Site Incharge/ Head-SAS |
| 6.1.6 | Findings of the HSEMS audits & its performance with respect to set objectives will be discussed in MQC meeting. Record notes of discussion of MQC meeting will be communicated to all Site Incharges / HODS for complying to the recommendations | MR(HSE) |
| 6.1.7 | The changes in laws/legislation & communication received from the Legislative Authorities viz. Ministry of Environment & Forests, State Pollution Control Board, Director of Factory & Factory Inspector will be conveyed to all concerned .. | MR(HSE) / HR |
| 6.1.8 | New, modified and changes in activities, which involve environment aspect & impact & OHS hazards & risks will be identified & communicated to MR (HSE) by core group member/ Site Coordinator through their HOD as per procedure in prescribed format. The new & modified activities shall include new machine or product / physical improvement / use of new chemical. This needs to be done prior to modification/changes in consultation with MR (HSE) | Core Group/ Site Incharge |
| 6.1.9 | The internal interested parties are consulted / communicated regarding pertinent environmental Aspects/ Impacts and Hazards/ Risks of activities/ products/ services through meetings/circulars/awareness training programs. | Site Incharge HODs, MR(HSE) |

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| Sr. | Activity | Responsibility |
|--------|---|------------------------------|
| 6.2 | External HSE Communication | |
| 6.2.0 | External communication with interested parties will be done through: <ul style="list-style-type: none"> • Correspondence. • Interaction by concerned parties. | MR(HSE)/ HR |
| 6.2.1 | External interested parties identified are as follows. <ul style="list-style-type: none"> • Ministry of Environment & forests. • State Pollution Control Board. • Factory Inspectorate • Controller of explosives. • Certifying body of HSEMS • District. Administration • Neighbours • Stakeholders • Other interested parties Company's HSE performance is reported through Annual Report published every year by the Corporate Office.. | BHEL Corporate Office |
| 6.2.2 | HSE Policy shall be made available to all interested parties on request. | MR (HSE) |
| 6.2.3 | Communication as required will be maintained with regulatory bodies on legal compliance & other requirements pertaining to HSE. | HOD/HR Site I/c |
| 6.2.4 | Any suggestion/complaints received from external interested parties will be documented, reviewed & replied after suitable action. Such communications will be maintained by Site Incharge/HOD - HR | HOD / HR, Site Incharge |
| 6.2.5 | To consider external communication for identification of any significant environmental aspects/non-tolerable OHS Hazards/Risks & also need to communicate significant environmental aspects /OHS Hazards to interested parties. | HOD / HR |
| 6.2.6 | The organization has decided not to communicate its environmental aspects and impacts to all the interested parties concern. The MR shall communicate the aspect impact identification to the Interested parties concern if the need arises after consulting all concerned officials of the organization. | MR(HSE) HOD / HR |
| 6.3 | Evaluation of Communication/ Communication, Participation & Consultation | |
| 6.3.1. | The effectiveness of the communication, participation & consultation tools used to increase HSE awareness will be evaluated during the HSE Management System Audits, improved injury trends, fewer incidents and/or employee complaints, etc. Employee general knowledge tested during the HSEMS audits is also evidence of effective communication. | MR(HSE) Core Committee |

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7 RECORD

| Record Title | Location | Responsibility | Retention time |
|---|----------------------|------------------------|----------------|
| Record Notes of MQC meeting | MR(HSE) Office | MR(HSE) | 3 Years |
| File on internal communication. | HOD / HR /Site I/C | HOD / HR /Site I/C | 3 Years |
| File on external communication. Including <ul style="list-style-type: none"> • MOEF • State PCB • CPCB • Factory Inspectorate • HSE certifying agency etc. | Site I/C HOD / HR | Site I/C / HOD / HR | 3 Years |

8. VERIFICATION, CORRECTIVE & PREVENTIVE ACTION:

MR (HSE) must ensure the effective implementation of above procedure. In case of deviation, he will take appropriate corrective & preventive action. MR (HSE) shall keep a record of all such actions initiated.



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DOCUMENTATION

Sheet No. 1 of 3

1. PURPOSE:

To define, establish and maintain a comprehensive documented procedure and a system towards exercising control over all the HSEMS related documents.

2. SCOPE:

This procedure shall apply to all the documents as has been specified under the purpose.

3. RESPONSIBILITY:

Management Representative (HSE),

4. PERFORMANCE CRITERIA:


Defined, established & maintained Documentation for effective implementation/maintenance of HSEMS

5. CROSS REFERENCES:

- ISO 14001(2004): Clause – 4.4.4, documentation.
- OHSAS – 18001 (2007): Clause 4.4.4, Documentation

6. PROCEDURE

| Sl. | Activity | Responsibility |
|-------|---|---|
| 6.0 | The objective of this documented HSE Management system is to ensure that the overall HSE objective of BHEL,PSSR is achieved & Implemented at all stages of its operation well in line with the,HSE policy of BHEL, PSSR | Site I/c,HODs/ Head/SAS MR (HSE)& Core Team |
| 6.1 | BHEL, PSSR has developed & documented the HSE Policy, which explains briefly the company's HSE philosophy, vision, goals, commitment to continual improvement, & prevention of pollution, compliance with national laws, policies & proactive expectations. | Site I/c,HODs/ Head/SAS MR (HSE)& Core Team |
| 6.2 | The documented HSE Management systems has been designed & structured in four levels as outlined below & explained in HSEMSM 17/ Annexure 1. | |
| 6.2.1 | LEVEL 1 : The HSE Management Systems Manual. The PSSR HSEMSM explains the various system elements & their interaction with other relevant elements & provide direction to related documentation. The manual covers all the system clause requirements of ISO 14001:2004. Environmental Management systems specification with guidance for use and OHSAS 18001:1999 Occupational Health & Safety Management systems specification. | Site I/c,HODs/ Head/SAS MR (HSE)& Core Team |

| | | |
|--|--|----------------------------------|
|  | OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL | Doc.No. HSEMSM 17 |
| | | Rev. No. 03 Date : 15.12.2008 |
| DOCUMENTATION | | Sheet No. 2 of 3 |

| Sr. | Activity | Responsibility |
|--------|--|---|
| 6.2.2. | LEVEL 2 : HSE MS Operational Manual . The HSE Level 2 Document comprises of a) Register of Aspects / Impacts b) Register of Hazards / Risks c) Register of HSE Regulations d) Operational Control Procedures - OCP e) Emergency preparedness and response plan – EMPR and f) Management Programs - MPs. The OCPs and MPs are for those operations & activities, which are associated with the identified significant environmental aspects/impacts & non-tolerable OHS hazards/risks in line with its HSE policy, objectives and Targets. The OCP defines Operating criteria in the procedures & also includes some of the system specific procedures related to the identifiable significant Environmental aspect/impacts and non-tolerable OHS hazards/risks of suppliers and contractors. | Site I/c,HODs/ Head/SAS MR (HSE)& Core Team |
| 6.2.3 | LEVEL 3 : HSE Check Lists and Formats. – Enclosed with Level 2 Documents | -do- |
| 6.2.4 | LEVEL 4 : HSE Records. All the records as referenced in all the procedures, which constitute the basis of this documented HSE Management Systems, and provide the objective evidence of system implementation and adoption. HSE records shall be legible, identifiable & traceable to the activity, product or services involved. HSE records shall be stored & maintained vide Procedure records/Records and records Management. | Site I/c,HODs/ Head/SAS MR (HSE)& Core Team |

7 RECORDS :

| Record Title | Location | Responsibility | Retention Time |
|--|-------------------------------|-------------------------------|----------------|
| HSE Policy | Office of MR / HOD / Site I/c | Office of MR / HOD / Site I/c | 3 years |
| Level I HSEMSM | Office of MR / HOD / Site I/c | Office of MR / HOD / Site I/c | 3 years |
| Level II Documents | Office of MR / HOD / Site I/c | Office of MR / HOD / Site I/c | 3 years |
| Master copy of HSE Check Lists and Formats | Office of MR / HOD / Site I/c | Office of MR / HOD / Site I/c | 3 years |
| Master list of records | Office of MR / HOD / Site I/c | Office of MR / HOD / Site I/c | 3 years |
| Updated Emergency preparedness plan | Office of MR / HOD / Site I/c | Office of MR / HOD / Site I/c | 3 years |
| Updated register of HSE regulation | HR / Site Incharge | Head HR / Site Incharge | 3 years |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION :

MR (HSE) must ensure the effective implementation of above procedure. In case of deviation, he will take appropriate corrective and preventive action. MR (HSE) shall keep a record of all such actions initiated.



OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL

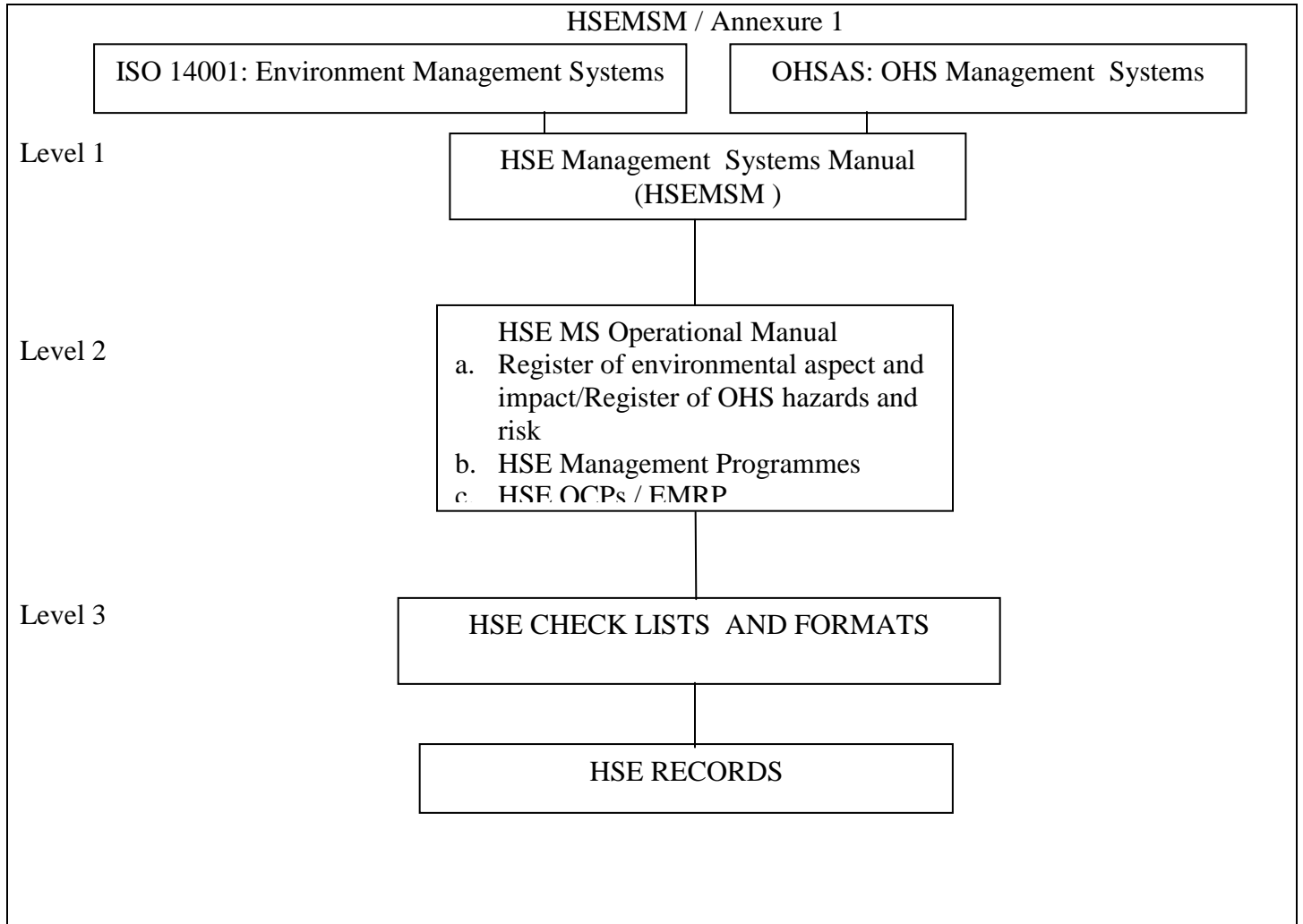
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DOCUMENTATION

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**OCCUPATIONAL HEALTH SAFETY AND
ENVIRONMENTAL MANAGEMENT SYSTEM
MANUAL**

Doc.No. HSEMSM 18

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CONTROL OF DOCUMENTS

Sheet No. 1 of 3

1. PURPOSE:

To establish and ensure that all documents and data related to the requirement of ISO-14001 (2004) & OHSAS-18001 (2007) are controlled for effective implementation & maintenance of HSEMS. The changes in case required, are reviewed and approved by authorized personnel to issue as hard copy or electronic form.

2. SCOPE:

Applicable to document & data of BHEL, PSSR, relating to HSEMS developed in line with ISO-14001 (2004) & OHSAS-18001(2007). It encompasses all issue of control documents and data including to the extent applicable documents of external origins such as acts/rules.

3. RESPONSIBILITY:

HODs, Site Incharges and MR(HSE)

4. PERFORMANCE CRITERIA: Controlled documents and data's

5. CROSS REFERENCES:

- ISO-14001 (2004), Clause – 4.4.5 : Control of documents
- ISO-14004, Clause – 4.3.3.2 : Document Control
- OHSAS-18001 (2007), Clause – 4.4.5: Document and Data Control.
- OHSAS-18002 (2007), Clause – 4.3.3.2 : Document and Data Control
- QMS/ SR/ 16: - Control of Documents & Quality Records
- HSE Policy

6 PROCEDURE


6.1 HSE Management System Manual

This document describes how all the elements of ISO-14001 & OHSAS – 18001 have been incorporated in PSSR.

6.2 Document Number System:

HSEMSM / xx / yy (Level 1) = Health, Safety and Environmental Management System Manual / Relevant section against each clause

HSE MS (Level 2) = Health, Safety and Environmental MS Operational Manual . This consists of a) AR/xx/yy – Register of Environmental Aspects and Impacts, b) HR/xx/yy - Register of OHS Hazards and Risks, c) ROR /xx/yy – Register of Regulations, d) OCP/xx/yy – Operational Control Procedure, e) EMRP /xx/yy – Emergency Preparedness and Response Plan and f) HSEMP/xx/yy – HSE Management Programme . (xx is running positive integer as 01, 02 etc.,and yy is revision no. as 00,01,02 etc)

| | | |
|--|--|----------------------------------|
|  | OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL | Doc.No. HSEMSM 18 |
| | | Rev. No. 03 Date : 15.12.2008 |
| CONTROL OF DOCUMENTS | | Sheet No. 2 of 3 |

All above documents will be identified with Issue Number, Revision Number, Date as applicable as per QMS/SR/16 : Process procedure for Document Control & Quality Records. (QMS / ISO 9001 : 2000)

All HSE related formats shall have the following Numbering scheme :

HSE-F – (xx) – (yy) / ii

where **F** stands for format, **xx** indicates the document (as identified in HSEMSM). **yy** indicates format number (01,02,03,...) and **ii** indicates revision number ie.00,01,02....

HSE-R – (xx) – (yy) / ii

where **R** stands for the record, **xx** indicates the document (as identified in HSEMSM). **yy** indicates record number (01,02,03,...) and **ii** indicates revision number ie.00,01,02....

6.3 Common Procedures:

The other Procedures which are followed in the implementation of HSE Management System are as given below. (These documents are falling under QMS – ISO 9001 : 2000 and are identified as Common Procedures.) .

- QMS/SR/03 : Identification of training needs.
- QMS/SR/15 : Control of Inspection Measuring and Test Equipments
- QMS/SR/16 : Control of Documents and Records.
- QMS/SR/17 : Internal Audit
- QMS/SR/18 : Control of Non-conformities, Corrective and Preventive action and Customer Complaints
- QMS/SR/ 19 : Management Representative

6.4 Other Documents :

Health , Safety and Environmental Plan for Construction Sites. This document is issued by Power Sector HQ – Technical Services commonly to all the Power Sector Regions (FEX Department in PSSR) which in turn issue to all sites and control.

6.5 Applicable Statutory and Regulatory Acts and Rules shall be available with MR (HSE) / Head – HR.

6.6 Others document pertaining to HSE and received from other units / division / external origin shall be authorised for use by the respective HODs / Site Incharges / MR (HSE)



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CONTROL OF DOCUMENTS

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| DOCUMENT NO. | ISSUING AUTHORITY | APPROVING AUTHORITY |
|-----------------------------------|--------------------------|----------------------------|
| HSE Policy | MR (HSE) | CEO |
| HSEMSM Level-1 | MR (HSE) | CEO |
| HSE MS Level – 2 | MR (HSE) | CEO |
| HSE Check Lists / Formats Level-3 | HSE Lead Auditors | MR (HSE) |
| HSE Records Level –4 | HSE Lead Auditors | MR (HSE) |

7 RECORDS:

| Record Title | Location | Responsibility | Retention time |
|----------------------------|-----------------|-----------------------|-----------------------|
| Master List of documents | MR office | MR | 3 years |
| Master list of formats | MR office | MR | 3 years |
| Document Distribution List | MR office | MR | 3 years |

8 VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

MR (HSE) must ensure the effective implementation of above procedure. In case of deviation, he will take appropriate corrective and preventive action. MR (HSE) shall keep a record of all such actions initiated.



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Doc.No. HSEMSM: 19

Rev. No. 03

Date :15.12.2008

OPERATIONAL CONTROL

Sheet No. 1 of 3

1. PURPOSE:

To establish & control documented procedures and to ensure that organization's significant environmental aspect & impacts & OHS hazards & associated risks are controlled in line with HSE policy including HSE communication to suppliers / contractors and integration of HSE requirements at planning stage.

2. SCOPE:

Applicable to all HSEMS related activities, products & services, conditions and facilities of BHEL, PSSR.

3. RESPONSIBILITY:

HODs , Site Incharges and Head-SAS

4. PERFORMANCE CRITERIA:


Records on implementation of operational control procedures as per HSEOM.

5. CROSS REFERENCES:

- ISO-14001, Clause – 4.4.6, Operational Control.
- OHSAS – 18001, Clause – 4.4.6, Operational Control.
- HSE Policy.
- Register of Environmental aspect & associated impacts.
- Register of OHS hazards & associated risks.
- Register of HSE Legislation & Regulations.

6. PROCEDURE

| Sr. | Activity | Responsibility |
|------------|--|-------------------------------------|
| 6.1 | Identify those activities, products, operation & services that are having significant aspects/impacts & Non tolerable OHS hazards/risks where operational control is required to be established and implemented. | Site I/c,HODs/ Head/SAS & Core Team |
| 6.2 | Documented operational control procedure (Refer Format No HSE-F-19-01/00) shall be prepared to cover the activities, operations & services where their absence could lead to deviation from HSE Policy. | - Do - |
| 6.3 | Auditable performance criteria shall be specified in every OCP. | - Do - |
| 6.4 | Operational Control Procedures shall be made available at the place of work in printed or electronic form in case of as may be asked by the user. | Site Incharge / HODs |

| | | |
|---|--|----------------------------------|
|  | OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL | Doc.No. HSEMSM 19 |
| | | Rev. No. 03 Date : 15.12.2008 |
| OPERATIONAL CONTROL | | Sheet No. 2 of 3 |


| Sl. | Activity | Responsibility |
|-----|--|---|
| 6.5 | The relevant OCPs / legal & other regulatory requirements shall be communicated to the suppliers & contractors to enable them to control their identified aspect & impacts & OHS Hazards & risks. | Heads of HR / SCT/PUR Site Incharge |
| 6.6 | To establish & maintain OCP for integration of HSE Requirement for design of workplace/process/installation/Machinery/operation to eliminate substitution of chemical or reduce OHS risks/environmental impacts at source. | MR(HSE) / Core Team / Site Incharge/ HODs/ Head-SAS |
| 6.7 | Critical equipment, machinery & other sources from the point of pollutant release in water or air & OHS risks shall be maintained as per laid down procedures in order to reduce / control or prevent environmental impacts & OHS risks. | Site incharge |
| 6.8 | Machine & equipment shall be operated, monitored as per the OCP & laid down criteria and records shall be maintained. | Site incharge/ |

7.0 RECORDS:

| Record Title | Location | Responsibility | Retention Time |
|---------------------|--------------------|----------------------------|----------------|
| Master List of OCPs | MR(HSE)OFFICE | Site I/c,HODs/ Head-SAS | 3 years |
| Maintenance Records | PICC Lab, FEX/SITE | HOD/SITE I/C | 3 years |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

MR(HSE) shall verify that the documented OCP are prepared and ensure the effective implementation of above procedure. In case of deviation, he will take appropriate corrective and preventive action. MR(HSE) shall keep a record of all such actions initiated.

| | | |
|---|--|----------------------------------|
|  | OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL | Doc.No HSEMSM 19 |
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| OPERATIONAL CONTROL | | Sheet No. of 3 of 3 |

Format No HSE-F-19-01/00


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| | | |
|---------------------------------|-----------------|-----------------------|
| 1. PURPOSE: | | |
| 2. SCOPE: | | |
| 3. RESPONSIBILITY: | | |
| 4. PERFORMANCE CRITERIA: | | |
| 5. CROSS REFERENCES: | | |
| 6. PROCEDURE | | |
| Sr. | Activity | Responsibility |
| | | |
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| | | |

7. RECORDS:

| Record Title | Record No. | Location | Responsibility | Retention Time |
|--------------|------------|----------|----------------|----------------|
| | | | | |
| | | | | |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION

| | | |
|--|--|----------------------------------|
|  | OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL | Doc No: HSEMSM 20 |
| | | Rev. No. 03 Date : 15.12.2008 |
| EMERGENCY PREPAREDNESS AND RESPONSE | | Sheet No. 1 of 3 |

1. PURPOSE:

To establish and maintain procedures to identify potential foreseeable incidents /emergency situation to prevent, control and mitigate environment associated impacts and OHS associated risks and to test effectiveness / review / revise such procedures periodically.

2. SCOPE:

Applicable to all HSEMS related activities, products, services, conditions and facilities of BHEL, PSSR.

3. RESPONSIBILITY:

- Site I/c/ HOD / Head-SAS
- HSE – co-ordinators
- Safety team / Group

4. PERFORMANCE CRITERIA:

- Updated on-site emergency plan.
- Incident record.
- Records of mock drills.

5. CROSS REFERENCES:

- ISO-14001, Clause-4.4.7, Emergency Preparedness and Response.
- OHSAS-18001, Clause – 4.4.7, Emergency Preparedness and Response.
- Register of Environmental aspect & associated impacts.
- Register of OHS hazards and associated risks.
- HSE Policy.

6. PROCEDURE:

| Sl. | Activity | Responsibility |
|-----|---|-------------------------------|
| 6.1 | Identify potential emergency situation & areas during Identification of Environmental aspect & associated Impacts and OHS Hazards and associated risks. | HODs/Site Incharge / Head-SAS |



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EMERGENCY PREPAREDNESS AND RESPONSE

Sheet No. 2 of 3

| Sl. | Activity | Responsibility |
|------------|---|---|
| 6.2 | The potential emergencies & related areas are identified and addressed in on-site emergency plan. The preventive, control & mitigating action for each type of foreseeable Potential shall be detailed in the above said plan | HODs/Site Incharge / Head-SAS / Core team |
| 6.3 | Explosive Mitigation: | |
| 6.3.1 | If there is fire following explosion, follow procedures for mitigation of fire as mentioned as EMPR | Site Incharge / Safety Incharge |
| 6.3.2 | If any person is injured in the explosion/fire provide first Aid or shift him to the dispensary. | -do- |
| 6.3.3 | If there is spillage of hazardous chemical following explosion, arrange to collect and clean the area and dispose it accordingly. | -do- |
| 6.3.4 | Take appropriate actions of mitigation of environmental impacts and OHS risks including collection and treatment and disposal of the effluent. | -do- |
| 6.4 | Corrective and Preventive action : | |
| 6.4.1 | Analyze the causes of occurrence of the explosion/fire and prepare a report specifying preventive measures to be taken for non recurrence of the incident/accident if any And maintain record. | Site Incharge |
| 6.4.2 | Document corrective & preventive actions arising out of these incidents. | Site Incharge |
| 6.4.3 | Inform regulatory authorities about the incident as per applicable legislation. | Site Incharge / HR |
| 6.5 | Major Spillage of Acid/Alkali/HSD / Chemicals | |
| 6.5.1 | Carry out total check of the storage tank on receipt at site | Site Incharge Or his nominee |
| 6.5.2 | Educate and train employee about proper storage and maintenance of storage area. | -do - |
| 6.5.3 | Unauthorized entry to be prohibited in the storage area. | -do - |
| 6.5.4 | Maintain and follow MSDS for all chemicals . | -do - |
| 6.6 | Major spillage of Acids/Alkali/HSD/Mitigation : | -do - |
| 6.6.1 | Do not allow people to go near the spilled area. | -do - |
| 6.6.2 | Clean the spilled chemical area with proper Safety Appliances. Maintain spill control measures at identified place. | -do - |
| 6.6.3 | Transfer the spilled Acid/Alkali/HSD/ and take action for mitigation of environmental impacts including collection and treatment of the effluent for treatment and disposal. | -do - |

| | | |
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|  | OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL | Doc No: HSEMSM 20 |
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| EMERGENCY PREPAREDNESS AND RESPONSE | | Sheet No. 3 of 3 |


| Sl. | Activity | Responsibility |
|------------|---|--|
| 6.7 | Corrective and preventive action : | |
| 6.7.1 | Analyse the cause of occurrence of the spillage and prepare a report specifying preventive measures to be taken for non-recurrence of this incident and maintain records. | Site Incharge Or his nominee |
| 6.7.2 | Inform Regulatory Authorities about the incident if any in prescribed form as per Applicable legislation. | Site Incharge/ HR |
| 6.7.3 | Review/Revision of procedure shall be once in two years in addition to situation of actual incidents. Reasons for amendments in operational control shall be Maintained. | Site Incharge/ HOD Head-SAS MR(HSE) |
| 6.7.4 | Review the onsite emergency plan once in two years and ensure updated version at requisite places as per emergency plan. Emergency plan to include all relevant details including internal/external communications. | Site Incharge/ Head-SAS / MR(HSE) |

7. RECORDS :

| Record Title | Record No. | Location | Responsibility | Retention time |
|---|------------|--------------------------------|----------------------------|------------------------------|
| <ul style="list-style-type: none"> • Updated on-site Emergency plan. • Incident Record. • Record of mock Drills. | EMPR | Site Office/ MR(HSE) Office | MR(HSE)/ Site Incharge/ | Continual till next revision |
| | File | HOD/FEX, HOD/HR | Head-SAS, HOD(FEX) / | |
| | File | | HOD(HR) | |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

MR (HSE) shall ensure effective implementation of this procedure, and in case of any deviation, he shall take appropriate corrective and preventive action.

| | | |
|---|--|----------------------------------|
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| | | Rev. No. 03 Date : 15.12.2008 |
| MONITORING AND MEASUREMENT / PERFORMANCE MEASUREMENT AND MONITORING | | Sheet No. 1 of 4 |

1. PURPOSE:

To establish and maintain documented procedures to :

- Monitor and measure documented programmes through documented OCPs & HSEMPs on operation and other activities that can have significant environmental impacts & OHS risks.
- To ensure calibration of sensitive monitoring equipment and maintain records in order to ensure functioning of the system.
- Periodically ensure, evaluate compliance with respect to applicable HSE regulation and take appropriate action.
- To monitor HSE performance of BHEL, PSSR activities on annual basis and identify opportunities for improvement.

2. SCOPE:

Applicable to all HSEMS related activities, products & services, conditions & facilities of BHEL, PSSR and contractors at sites..`

3. RESPONSIBILITY:


Site Incharge, HODs , Head SAS and Management Representative (HSE)

4. PERFORMANCE CRITERIA:

- Monitoring and measurement record as per HSEMSM and HSEOM.
- Calibration record.
- HSE regulatory compliance record.
- HSE performance evaluation record.

5. CROSS REFERENCES:

- ISO-14001, Clause – 4.5.1, Monitoring and Measurement.
- ISO-14004, Clause – 4.5.2, Monitoring and Measurement
- OHSAS – 18001 (2007), Clause – 4.5.1, Performance Measurement & Monitoring.
- OHSAS – 18002 (2007), Clause – 4.5.2, Performance Measurement & Monitoring
- HSE Policy.

| | | |
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| MONITORING AND MEASUREMENT / PERFORMANCE MEASUREMENT AND MONITORING | | Sheet No. 2 of 4 |

6.0 PROCEDURE.


| Sl. | Activity | Responsibility |
|--------|---|--|
| 6.1 | Continual & periodic monitoring of HSEMS is carried out . | Site I/C,HOD, Head-SAS, Core Team, MR(HSE) |
| 6.1.1. | Establishing auditable performance indicators in the respective department's HSEMS Management Programmes & performance criteria in HSEMS OCPs. | Site I/C,HOD, Head-SAS, Core Team, MR(HSE) |
| 6.1.2 | HSE Management Programmes are monitored through quarterly review as well through MQC Meeting. | MR(HSE)/Site I/c & HODs |
| 6.1.3 | The weakness in implementation of HSEMS is identified and rectified by periodic internal HSEMS Audits. | MR(HSE)/ auditors |
| 6.1.4 | HSEMS Management Review. | MR(HSE) |
| 6.1.5 | Monitoring/ Measurement of key characteristics / process parameters and other activities as per the annexure to this section. | MR(HSE)/ Site I/C/HOD |
| 6.2 | To identify the equipment concerning monitoring of HSE parameters and its calibration as per calibration procedure QMS/SR/15 | MR(HSE)/ HOD/TSX |
| 6.3 | To establish and maintain procedures for periodic assessment of compliance of legal requirements and initiate appropriate corrective and preventive action in case of non-compliance. | Site I/C MR(HSE)/ HR |
| 6.4 | To monitor incident including near misses and employees health surveillance as per documented OCP. | Site I/cs, Head-SAS HR, MR(HSE) |
| 6.5 | Results of company's HSEMS shall be measured, monitored & compared on annual basis (Site Chief Meet) considering established HSEMS performance data | MR(HSE) |

7. RECORDS.

| Record Title | Location | Responsibility | Retention time |
|-----------------------------|----------------|----------------|----------------|
| Calibration reports | TSX Office | HOD(TSX) | 2 Years |
| HSE Audit reports | MR(HSE) Office | MR(HSE) | 3Years |
| Quarterly HSEMP Review | MR(HSE) Office | MR(HSE) | 3Years |
| HSEMS performance data | MR(HSE) Office | MR(HSE) | 3Years |
| Health surveillance record. | HOD/HR Office | HOD/HR | 3Years |
| Minutes of MQC Meeting | MR(HSE) Office | MR(HSE) | 3Years |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

MR(HSE) shall ensure effective implementation of this procedure and in case of any deviation, he shall take appropriate, corrective and preventive action.

| | | |
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| MONITORING AND MEASUREMENT / PERFORMANCE MEASUREMENT AND MONITORING | | Sheet No. 3 of 4 |

Monitoring and Measurement compliance for HSE parameters

| S.NO | HSE parameter for monitoring | UoM | Frequency | Responsibility | File No: |
|------|--|--|--|--|---|
| 1. | Air Quality <ul style="list-style-type: none"> • SPM • RSPM • Sox • Nox | µg/Nm ³ µg/Nm ³ ppm ppm | Once in a year or as per Occupiers Schedule for SPM & RSPM. Once in a month for Sox&Nox | Occupier for SPM & RSPM Occupier/BHEL as applicable | Site Records |
| 2. | Drinking Water <ul style="list-style-type: none"> • BOD • COD • Total Coliform (MPN) • Ph | mg/l mg/l | Once in a year or as per Occupiers Schedule | Occupier/BHEL | Site Records on Drinking water Analysis Report |
| 3. | Effluent water quality (after neutralization) <ul style="list-style-type: none"> • pH | --- | Whenever effluent Discharged . | Occupier/BHEL as applicable | Site Records |




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**MONITORING AND MEASUREMENT / PERFORMANCE MEASUREMENT AND
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| | | | | | |
|------|--|--------|-----------------------------|----------------|---------------------------------|
| 4. | Noise Level Measurement | dB | Once in 3 Months | Occupier/BHEL | Site Records |
| 5. | Illumination | lux | Once in 6 Months | Occupier/BHEL | Site Records |
| 6. | Insurances | Rupees | | | |
| 7. | Compensation paid | Rupees | | | |
| 8. | HSE Management programme | Nos. | ----- | BHEL | Master List of HSE MP |
| S.NO | HSE parameter for monitoring | UoM | Frequency | Responsibility | File No: |
| 9. | OCPs | Nos. | ----- | BHEL | Master List of OCP |
| 10. | Legal Compliance | Nos. | ----- | Occupier/BHEL | Site Records |
| 11. | Accidents/Incidents <ul style="list-style-type: none"> • Reportable/ non-reportable accidents • Incidents • Man days lost | Nos. | Quarterly Reports | BHEL | Site Records |
| 12. | Load testing of T & Ps | ----- | As per maintenance Schedule | BHEL | Site / HQ Records as applicable |

| | | |
|--|--|--|
|  | OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL | Doc.No: HSEMSM 22 |
| NON CONFORMITY, CORRECTIVE ACTION AND PREVENTIVE ACTION / INCIDENT INVESTIGATION, NON CONFORMITY, CORRECTIVE AND PREVENTIVE ACTIONS | | Rev. No. 03 Date 15.12.2008 Sheet No. 1 of 3 |

1. PURPOSE:

To establish and maintain documented records of incidents, operating procedures defining the responsibilities and authority for identifying and investigating non-conformances and taking action to improve the HSE Performance.

2. SCOPE :

Applicable to all HSEMS related activities, products, services, conditions & facilities of BHEL, PSSR

3. RESPONSIBILITY:


HODs /Site Incharges / Head-SAS

4. PERFORMANCE CRITERIA:

Corrective and preventive action mentioned in the HSEMS procedure.


5. CROSS-REFERENCES:

- ISO-14001, Clause – 4.5.3 Nonconformity, corrective action and preventive action
- ISO-14004, Clause – 4.5.3, continual improvement
- OHSAS – 18001(2007), Clause 4.5.3, Incidents, non-conformances and corrective and preventive action.
- OHSAS – 18002 (2007) Clause 4.5.3, Incidents, Non-conformance and corrective and preventive action.
- HSE Policy.
- IS 3786 : 1983

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6.0 PROCEDURE

| Sr. | Activity | Responsibility |
|-----|---|---|
| 6.1 | <p>Non-conformance, & incidents which may affect the HSE performance shall be identified through :</p> <ul style="list-style-type: none"> • Recording incidents (including near misses.) • Carryout investigation to find out the root causes of incidents. • Carryout assessment of effectiveness for HSE investigation and reporting made by site HSE co-ordinator and report to MR(HSE) • HSE MS Audit reports • Circulate/Share lessons learnt from the investigation of NCR across other BHEL regions • Progress & implementation of HSEMPs, OCPs • Record Notes of Management Review on HSE MS • Legal Regulation compliance report. • Results of mock drill of on-site emergency plan. • Corrective & preventive action records. • By carrying out safety walk within activity premises • Suggestions received from employees • Maintain register of all incidents at site • Review /update OHS hazards & associated risks, environmental aspects & impacts and Operational Control Procedures after occurrence of any Incidents or at least once in a year . • Site I/C and HSE Coordinator shall communicate to employees, Contractors, Principal Employer regarding appropriate immediate action(s) to be taken up on observation of any non-conformance, incidents or Hazards. • Incident (Personal injury) Report shall be sent to FEX Department of PSSR, in the Incident (Personal injury) Report Form • Monthly Report on Site Safety review shall be sent to FEX Department of PSSR . • Quarterly Fire Safety report shall be sent to FEX Department of PSSR . • Monthly Man power status report shall be sent to FEX Department of PSSR . | Site Incharge HODs/ Head-SAS/ MR(HSE) Safety I/C. |
| 6.2 | <p>Above non-conformities/deviations & corrective & preventive action shall be recorded and reported . Time bound corrective & preventive actions based on the investigations shall be initiated to mitigate the significant aspect/non-tolerable risks. Preventive action shall be taken to avoid reoccurrence.</p> | Site Incharge HODs/ Head-SAS/ MR(HSE) |

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| | | |
|-----|---|--|
| 6.3 | Where a corrective and preventive action constitutes a change in HSEMS in the light of root causes, an amendment shall be issued covering that particular process or activity. | Site Incharge HODs/ Head-SAS/ MR(HSE) |
| 6.4 | Any corrective or preventive action taken to eliminate the causes of actual & potential non-conformance shall be appropriate to the magnitude of the problem and commensurate with the environment impact/ OHS Hazards/Risks encountered. | Site Incharge HODs/ Head-SAS/ MR(HSE) |

7. RECORDS:

| Record Title | Location | Responsibility | Retention time |
|------------------------------|--|---|----------------|
| NCR Reports | Site / MR (HSE) office | Site I/C MR (HSE) | 3 Years |
| Problem investigation report | Site Incharge / HODs/ Head-SAS / MR(HSE) | Site Incharge HODs/ Head-SAS / MR(HSE) | 3 Years |
| Incident Report | Site In charge / HODs/ Head-SAS / MR(HSE)/HOD(FEX) | Site Incharge HODs/ Head-SAS / MR(HSE) / HOD(FEX) | 3 Years |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

MR(HSE) shall ensure effective implementation of this procedure, and in case of any deviation, he shall take appropriate, corrective and preventive action.

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|  | OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL | Doc.No: HSEMSM: 23 |
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| CONTROL OF RECORDS | | Sheet No. 1 of 2 |

1. PURPOSE:

To establish and maintain procedures for the identification, maintenance and disposition of HSEMS records as well as the results of HSEMS audits and services to demonstrate the evidence of HSEMS.

2. SCOPE :

Applicable to all HSEMS related activities, products, services, conditions & facilities of BHEL, PSSR

3. RESPONSIBILITY:

The overall responsibility for establishing implementing, maintaining and updating this procedure lies with MR (HSE)

4. PERFORMANCE CRITERIA:


Master list of HSEMS records

5. CROSS-REFERENCES:

- ISO-14001 (2004), clause 4.5.4 Control of records
- ISO-14004 (2004) Clause 4.4.4
- OHSAS – 18001(2007), Clause 4.5.4, Control of Records
- HSE Policy.

PROCEDURE:

| Sr. | Activity | Responsibility |
|-------|--|---|
| 6.1 | All HSEMS records including pertinent contractors / suppliers information records, and other records as mentioned into various procedures of this manual shall be prepared legibly and maintained at designated locations. | Site I/C, HSE Coordinator, MR (HSE) |
| 6.2 | Records are identified on similar lines as given in QMS / SR / 16 | MR (HSE) |
| 6.2.1 | The records are correlated to respective activity / services | Site I/C |
| 6.3 | Filing Retention, access, storage and Maintenance | MR (HSE) |
| 6.3.1 | Identification, filing, retention period, easy access and storage by defining location and person responsible for maintaining all the HSEMS records is defined in the respective associated procedures | MR (HSE) |

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| CONTROL OF RECORDS | | Sheet No. 2 of 2 |

| Sr. | Activity | Responsibility |
|-------|--|----------------------------------|
| 6.3.2 | In case of any correction the changes in records shall be authorized. | MR (HSE) |
| 6.4 | Sub Contractor records. | |
| 6.4.1 | Ensure HSEMS records of Subcontractor are maintained (e.g. Records on Occupational Health system , Incidents, disposal of waste etc.) | Site I/C Head/SAS HOD(FEX) |
| 6.5 | Prevention from Damage or Loss & maintenance. | |
| 6.5.1 | The records are kept & maintained by the concerned person for each record as mentioned in the respective procedures. | Site I/C Head/SAS HOD(FEX) |
| 6.6 | Disposition of HSEMS records. | |
| 6.6.1 | The records are disposed off by any one of the following Means : <ul style="list-style-type: none"> • After the retention period if not required by the customer/department, the concerned personal responsible for the records, destroys the records. • The records need to be preserved more than the retention period, the concerned personnel stores with himself or in the identified location. Electronic data is maintained as per the procedure for control of electronic HSEMS records. | MR (HSE) |
| 6.7 | Necessary records shall also be maintained in the electronic form (soft copy) | MR (HSE) / HOD(IT) |

7.0 RECORDS:

| Record title. | Location | Responsibility | Retention time |
|------------------------------|----------------|----------------|----------------|
| Master List of HSEMS Records | MR(HSE) Office | MR(HSE) | 3 Years |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

MR (HSE) shall ensure effective implementation of the above procedures through audits.



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MANUAL**

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INTERNAL AUDIT

Sheet No. 1 of 2

PURPOSE:

To establish and maintain an internal audit programme for periodic HSEMS audits and to determine effective implementation of HSEMS.

1. SCOPE:

Applicable to all HSEMS related activities, products and services at BHEL, PSSR

2. RESPONSIBILITY:

The overall responsibility for establishing, documenting, and updating this procedure lies with MR (HS

3. PERFORMANCE CRITERIA: Internal HSEMS audit report.

4. CROSS-REFERENCES:

- ISO-14001(2004), Clause 4.5.5, Internal audit
- ISO-14004 (2004), Clause 4.5.5,
- OHSAS – 18001 (2007), Clause 4.5.5, Audit.
- OHSAS – 18002 (2008), Clause
- Register of HSE Legislation and Regulation.
- Register of environmental aspect and associated impact.
- Register of OHS Hazards & associated risks.
- HSE policy.
- Previous HSE Audit Finding.
- QMS/SR/17

5. PROCEDURE:

| Sr. | Activity | Responsibility |
|--------|---|----------------|
| 6.1 | Internal HSEMS Audit Planning. | MR(HSE) |
| 6.1.1. | “Internal HSE-MS audit plan” is prepared for the year to include periodic auditing of all functional areas. | MR(HSE) |
| 6.1.2. | The audit plan shall be made in such a way that all areas are covered once in six months & also considering importance of activity concerned/environmental aspects. | MR(HSE) |
| 6.1.3 | The audit plan is reviewed and updated if required. | MR(HSE) |



**OCCUPATIONAL HEALTH SAFETY AND
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INTERNAL AUDIT

Sheet No. 2 of 2


| Sr. | Activity | Responsibility |
|-------|---|-----------------------|
| 6.1.4 | Approved & trained internal auditors audit the system. It is ensured that the internal auditors have no responsibility or direct control on the department under audit. | MR(HSE) |
| 6.1.5 | A "List of qualified auditor" is maintained & up date. | MR(HSE) |
| 6.2 | Execution of Audits, While auditing following points shall be checked. | Auditor |
| 6.2.1 | Review of previous audits results. | Auditor |
| 6.2.2 | Implementation of all applicable clauses relevant to audit area as per the matrix showing applicable ISO-14001 and OHSAS-18001 clauses and departments. | Auditor |
| 6.2.3 | Evidence is collected through inter views, examination of document's /Records. Past audit findings, observation of activities and condition in the audit areas. | Auditor |
| 6.3 | Audit Reports (Non-conformance Reports) | MR(HSE) |
| 6.3.1 | Internal HSEMS audit report" shall be forwarded to the respective auditee with in fifteen days in the prescribed format (refer format no.....) | MR(HSE) Auditor |
| 6.3.2 | Reference is made to the document's against which audit was carried out in the internal HSEMS audit report. | MR(HSE) Auditor |
| 6.3.3 | Signature of the auditee is obtained on the "Internal HSEMS audit report". | MR(HSE) Auditor |
| 6.3.4 | Corrective & preventive actions are to be taken up and recorded in NCR Report, where ever applicable. | Auditee |
| 6.4 | Follow up of corrective actions. | MR(HSE) / Auditors |
| 6.4.1 | Timely corrective actions are taken as agreed and is recorded on the "Internal HSEMS audit report" | Auditee |
| 6.4.2 | Implementation of the corrective & preventive action is followed up with the auditee and the same is reviewed for effective implementation based on "Internal HSEMS Audit report" | MR(HSE) |
| 6.4.3 | The final closure of the "Internal HSEMS Audit Report" is verified for the effective implementation of the action taken and disposition of non-conformity (if any). | MR(HSE)/ Auditor |
| 6.5 | Audit review. | MR(HSE) |
| 6.5.1 | Audit findings submitted to Management for review and follow up action | MR(HSE) |

7. RECORDS:

| Record Title | Location | Responsibility | Retention time |
|-----------------------------|---------------|----------------|----------------|
| Audit Calendar. | MR(HSE)Office | MR(HSE) | 3 Years |
| Internal HSEMS Audit Record | MR(HSE)Office | MR(HSE) | 3 Years |
| List of Qualified auditors | MR(HSE)Office | MR(HSE) | 3 Years |

8. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

MR(HSE) shall ensure effective implementation of this procedure, and in case of any deviation, he shall take appropriate corrective and preventive action.

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|  | OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANUAL | Doc.No: HSEMSM: 25 |
| | | Rev. No. 03 Date : 15.12.2008 |
| MANAGEMENT REVIEW | | Sheet No. 1 of 2 |

1. PURPOSE:

To establish and maintain procedures for periodic review by top management of HSEMS to ensure its suitability, adequacy and effectiveness.

2. SCOPE:

Applicable to all management reviews of the HSEMS established and maintained at BHEL, PSSR

3. RESPONSIBILITY:

The overall responsibility for establishing, documenting, & updating this procedure lies with MR(HSE)

4. PERFORMANCE CRITERIA:


Record notes of discussion during the Management Review on HSEMS.

5. CROSS-REFERENCES:

- ISO 14001(2004), Clause – 4.6 Management Review
- OHSAS 18001, clause 4.6, Management Review.
- Operational control procedures.
- HSE MS Audit Reports.
- Non conformance and corrective and preventive action.
- Master list of objectives and targets.
- HSE Policy.
- QMS/SR/19

6. PROCEDURE:

| Sr. | Activity | Responsibility |
|--------|---|----------------|
| 6.1 | Planning for Management Review. | MR(HSE) |
| 6.1.1. | Management review on HSE MS shall be conducted twice in a year (preferably at an interval of about six months). However in the initial stage of HSEMS implementation review meeting may be conducted more frequently as and when need is felt by MR (HSE) | MR(HSE) |
| 6.1.2 | An agenda is prepared by MR(HSE) and issued to all the members of Management Review. | MR(HSE) |

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| MANAGEMENT REVIEW | | Sheet No. 2 of 2 |

| Sr. | Activity | Responsibility |
|-------|---|--------------------------|
| 6.1.3 | Agenda for the management review shall cover topics such as : <ul style="list-style-type: none"> • Results of internal audits and evaluation of compliance with legal requirements and with other requirements to which the organization subscribes • Communication from any external parties, including complaints • HSE performance of the organization • The extent to which the objectives and targets have been met • Status of the Incident investigations, corrective and preventive actions • Follow up actions from previous management reviews • Changing circumstances including developments in legal and other requirements related to its environmental aspects and OHS hazards • Results of participation and consultations • Recommendations for improvements • Review of the HSE Policy • Relevant communications from external interested parties including complaints • Evaluation of effectiveness of the HSE Management System including commitment to continual improvement • Any additional point identified by the MR or chairman of the meeting | MR(HSE) |
| 6.1.4 | Departmental report for HSEMS is provided by each department on the above topics to the MR at least a week before the Management review meeting date. | Site I/c ,HOD & Head-SAS |
| 6.1.5 | The Record notes of the meeting shall be prepared and circulated to all the concerned for necessary corrective and preventive actions. | MR (HSE) |

9. RECORDS:

| Record Title | Location | Responsibility | Retention time |
|---------------------------------|---------------|----------------|----------------|
| Agenda of Review meetings | MR(HSE)Office | MR(HSE) | 3 Years |
| Record notes of Review meetings | MR(HSE)Office | MR(HSE) | 3 Years |

10. VERIFICATION, CORRECTIVE AND PREVENTIVE ACTION:

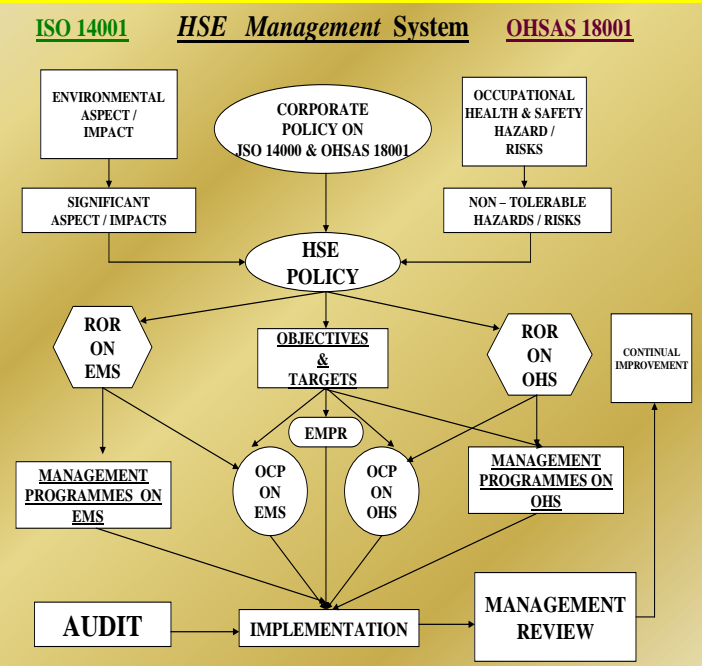
MR (HSE) shall ensure effective implementation of this procedure, and in case of any deviation, he shall take appropriate corrective and preventive action.

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OCCUPATIONAL HEALTH SAFETY AND ENVIRONMENTAL MANAGEMENT SYSTEM MANNUAL (HSEMSM) (ISO 14001: 2004 & OHSAS – 18001: 2007)



**Drum lifting by Strand jack method at Unit -1
Neyveli TPS 2x250MW – Drum at inclined
Position at 16.5 M elevation.**



**BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR – SOUTHERN REGION
CHENNAI – 600 035**