

# ENVIRONMENTAL MANAGEMENT PLAN FOR THE OPERATION OF THE AUAS 400kV TRANSMISSION STATION



Compiled by: Environmental Section

On behalf of: NamPower

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Namibia

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# LIST OF TERMS, ACRONYMS AND ABBREVIATIONS

DEA Department of Environmental Affairs

EA Environmental Assessment

EAP Environmental Assessment Practitioner

EIA Environmental Impact Assessment

EMA Environmental Management Act no 7 of 2007

EMP Environmental Management Plan

MET Ministry of Environment and Tourism

SHEW Safety, Health, Environment and Wellness

PCO Pest Control Officer

ECO Environmental Control Officer

MSDS Material Safety Data Sheet

# **DEFINITIONS**

**Construction:** Means the building, erection or modification of a facility, structure or infrastructure that is necessary for undertaking of an activity including the modification, alteration, upgrading or decommissioning of such facility, structure or infrastructure.

**Contractor:** Means a person (other than a NamPower employee) or a company contracted/ legally appointed by NamPower to perform work for NamPower on a NamPower site/premises.

#### INTRODUCTION

The NamPower Auas 400/220/132 kV Substation is located east of Windhoek along the Dordabis road. It has been in operation since 1999 and covers a land area of approximately 166, 747 hectares, of which the entire land area is not developed as a portion of the land is still open. This substation is one of NamPower's biggest substation in Namibia and this Operational Environmental Management Plan (OEMP) covers their entire land area (inclusive of the undeveloped land area). There is an existing tarred road leading to the substation and there is boundary fence around the Substation as well as a small office block with ablution, conferencing and kitchen facilities. Only security officials are permanently stationed at this substation in a separate office located at the entrance of the substation as this is an unmanned substation.

This Substation was constructed prior to the promulgation of the Environmental Regulations, thus no environmental impact assessment (EIA) was conducted in this regard. The purpose of this document is therefore to provide an indication of the anticipated impacts the operation of the Auas Substation have on the receiving environment, as some of these activities are listed activities as per the Environmental Regulations and will require an Environmental Clearance Certificate (ECC). This Operational Environmental Management Plan (EMP) will ensure sound environmental performance by all contractors and NamPower employees during the operation of the substation.

#### **AIMS**

The aim of this operational EMP is to detail the management actions required to implement the mitigation measures identified thereby ensuring that any operational phase activity is carried out in a manner that takes cognisance of sustainable development and is in line with National legislation. These actions are required to minimise negative impacts and enhance positive impacts associated with the operations.

It is important to note that an EMP is a working document and therefore may be updated and amended as new information (e.g. environmental data), policies, authority guidelines and technologies develop especially during operational phase of this Substation.

The operational EMP is concise and practical to ensure easy implementation and compliance by all involved in this project and also during operation of the substation

Positive and negative impacts as well as impacts which may affect both the social and natural environment have been considered in order to provide a complete picture of the impacts that the project may have on the receiving environment.

#### **SCOPE OF WORK**

The following operational phase activities describe the scope of work to be conducted in future at the Auas Substation:

# **Operational phase activities**

- a. Maintenance of the substation, NamPower will maintain the substation to ensure its reliability and safety and annual review will be conducted and any maintenance to be carried out as required.
- b. General site inspection to be carried out by the technical and Safety ,Health ,Environment and Wellness Departments.
- c. Extension or upgrading of the substation infrastructures in terms of additional line bays involves the following:
  - i) Construction of temporary or permanent buildings (digging and setting of foundations, digging of cable trenches)
  - ii) Extension of boundary fences
  - iii) Construction of additional feeder bays
  - iv) Upgrade of electrical equipment (either in size, capacity or technology)
  - v) Connection of new lines to Substations
- d. Vegetation Management
  - i) Manually
  - ii) Mechanically
  - iii) Herbicide application
  - iv) Combination of one or two methods
- e. Site inspections
  - i) Technical
  - ii) SHEW
- f. Substation housekeeping, and refurbishment of buildings
- g. Distribution of electricity
- h. Maintenance
  - i) Replacement of batteries
  - ii) Servicing batteries
  - iii) Replacing electrical equipment such as transformers, relays and capacitors
  - iv) Maintenance of electrical equipment such as transformers, relays and capacitors

- v) Construction or repairing of access roads
- i. Daily office activities

It is important to note that all environmental issues will be taken into account from the onset of the project to ensure environmental best practice is incorporated during the construction phase.

#### SPECIFIC CONDITIONS

The following conditions shall be applicable to all NamPower employees, contractors and consultants entering the Auas Substation site:

- The Substation is a restricted area, public should be allowed to enter without approval and/or without induction.
- Moderate speed of 20km/hr should be maintained on access roads to minimize on access roads to minimize or avoid dust pollution, especially close to homesteads, clinics, schools or trading stores.
- Site vehicles should be permitted only on existing roads. Vehicles are not permitted
  on re-vegetated areas and site traffic should be limited to prevent unnecessary
  damage to the natural environment.
- Vehicles transporting the construction material and/or hazardous material should be supplied with oil spillage mop-up kits.
- The drivers of these vehicles should know the emergency contact details, should there be an accidental oil spillage.
- Safety check on the transported material must be conducted prior to the delivery and after re-loading.
- Caution must be taken when operating the existing cabinets, as they are often inhabited by bees, wasps and hornets.
- Storm water runoff must be managed efficiently so as to avoid storm water damage and erosion to adjacent properties.
- All decommissioned equipment (e.g. cabling, acid batteries, AC/DC panels etc.) should not be left on site.
- Non-reusable or non-recyclable materials should be disposed of at the Swakopmund Municipal dumpsite as it is registered to carry such waste.
- Dust emitted during construction activities must be controlled by means water suppressants.
- Temporary ablution facilities must be provided on site.
- Vegetation management can only be undertaken with a valid ECC in place and as per the NamPower Herbicide Application Procedure (see Annexure 2) and the NamPower Herbicide Application EMP (see Annexure 3).
- During the replacement of certain equipment, the following must be considered.
  - All decommissioned equipment from the substation (e.g. faulty transformers, cracked or rotten poles and faulty cables, old re-closers and sectionalizes) shall not be left on site. Reusable and recyclable materials shall be sent to Brakwater stores.

- All oil spill incidents shall be reported to the Environmental Section (See contact details below) and the incident report form completed and submitted to the Environmental Section.
- Absorbent cushions should be utilized to ensure that oil does not come out of the outlet. This cushion is primarily used to trap oil. A cushion must be placed inside the bund wall itself, but at the mouth of the outlet.
- It is the responsibility of the Asset owner to ensure that these bund walls are maintained properly i.e. periodically changed when necessary.
  - Where applicable all eroded areas on access road must be rehabilitated by: Levelling and straightening all spoiled areas within and around the substation; and storm water diversion berms must be constructed on the access road where applicable.
- Fire extinguishers must be available on site at all times.
- The site must be rehabilitated to its original state after any operational phase activities have been undertaken.

#### **LEGISLATION**

All actions going forward should take cognisance of the relevant laws in order to ensure that the project remains within the scope of the law. The *table 1* provides a summary of the main pieces of national legal requirements which needs to be taken into consideration during operational phase activities:

Table 1. Legislation applicable to the proposed development

| Legislation:                              | Section applicable: | Implications:  |
|---|---------------------|--|
| Environmental Management Act no 7 of 2007 | • Section 3         | <ul> <li>All activities performed should be in line with the following principles:         <ul> <li>Interested and affected parties should have an opportunity to participate in decision making</li> <li>Listed activities should be subject to an EIA</li> <li>Polluter should pay for rehabilitation</li> </ul> </li> </ul> |
|   | Section 27          | <ul> <li>Pollution should be minimised</li> <li>Environmental assessments should be carried out for listed activities. The proposed activity can be classified under the following</li> </ul>  |
|   | - Coston of         | range of activities:  o Land use and transformation  These sections details the process to be followed in order to obtain a clearance certificate  All existing listed activities must obtain a clearance certificate within one year of the   |

| Legislation:   | Section applicable:  | Implications:   |
|--|--|---|
|  | аррисаые.  | law coming into affect (February 2013). Therefore, all existing activities which can be considered a listed activity should apply for clearance.  |
| EMA Regulations<br>GN 28-30 (GG 4878)<br>(February 2012) | <ul> <li>Listed activity: 5.1</li> <li>6 - 9; 13; 15; 21 -24</li> </ul>                      | <ul> <li>This activity can be considered a rezoning of property from Undetermined to civic</li> <li>These sections details the process to be followed in terms of producing an Environmental Assessment, and this process should be adhered to during the generation of information for this document</li> </ul>  |
| Labour Act no 11 of 2007                                 | <ul> <li>Section 3</li> <li>Section 4</li> <li>Section 9</li> <li>Section 39 - 42</li> </ul> | <ul> <li>Children under the age of 16 may not be employed</li> <li>Forced labour may not be used during any construction activities</li> <li>Basic conditions of employment, as stipulated by the law, must be met</li> <li>The employer shall ensure the health and safety of all employees and non-employees on site. Employees must fulfil their duties in order to ensure their own health and safety and that of other employees and persons. Employees may leave the work site if reasonable measures to protect their health are not taken.</li> </ul> |
| Water Act no 54 of 1956                                  | <ul><li>Section 21 and 22</li><li>Section 23</li></ul>                                       | <ul> <li>Conditions in terms of the disposal and management of effluent are to be adhered to</li> <li>Any person causing pollution to a water source shall be guilty of an offence</li> </ul>   |
| Soil Conservation<br>Act no 76 of 1969                   | Section 4  | <ul> <li>Institutions may be ordered by the relevant<br/>Minister to construct soil conservation works<br/>when and where necessary.</li> </ul>   |
| Public Health Act no 36 of 1919                          | Section 122  | <ul> <li>It is an offence to cause any form of a nuisance</li> </ul>  |
| Water Resources Management Act no 24 of 2004             | Section 56   | <ul> <li>No discharge of effluent may take place without a permit</li> <li>Effluent is defined under this Act as any liquid discharge that occurs as a result of domestic, commercial, industrial or agricultural activities</li> </ul>   |
| Nature<br>Conservation<br>Ordinance no 4 of<br>1975      | Section 74   | Protected plants may not be removed or damaged without a permit   |

| Legislation:    | Section          | Implications:                                   |
|-----------------|------------------|---|
|                 | applicable:      |   |
| Fertilizer,farm | Section 9 and 18 | To regulate or prohobit the importation         |
| feeds,agricural |                  | ,sale,aquisation,disposal or use of fertilisers |
| remidies and    |                  | ,farm feeds,agriculrural remedies and stock     |
| stock remmedies |                  | remedies.                                       |
| act 36 of 1947  |                  |   |

# **ROLES AND RESPONSIBILITIES**

It is the responsibility of NamPower to ensure that all management actions are carried out. The successful implementation of the EMP is, however dependant on clearly defined roles and responsibilities by several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during each phase of the project. The following roles and responsibilities have been identified as it pertains to this project:

#### 1. Project Manager shall ensure that :

- Environmental requirements are adequately covered in the contract.
- Corrective action is identified for non-compliances or in the event of unforeseen environmental issues requiring environmental management action and that this is implemented.
- Appropriate records and information regarding compliance with environmental requirements are maintained.
- That the Contractor remains in compliance with the requirements of this EMP, through regular communication and monitoring.
- SHE requirements are included in the tender documents sent to the contractor.
- Information is provided on environmental performance to the contractor and relevant authorities when required.
- All site instructions are clearly communicated to the staff on site.
- Ongoing monitoring of the construction site is undertaken through regular site visits and record key finding. This includes photographic monitoring of the construction site.
- Keep appropriate records events and concerns of significance.

#### 2. NamPower SHEW Section shall:

- Ensure that all requirements with regards to this EMP are fulfilled.
- Assist the Project Manager in ensuring the contractor remains in compliance with this EMP.
- Provide SHEW inductions for the contractors and their employees
- Organize and implement monitoring and audit functions, in consultation with the Project Manager.
- Report back to the Project manager on contractor compliance to the EMP before the project close-off and final payment is made to the contractor
- Audit the implementation of this EMP by the Contractor.
- Advise the Contractor on actions or issues impacting on the environment and provide appropriate recommendations to address these matters.

#### 2. The Contractor shall:

- Be responsible for the implementation of the EMP
- Ensure all tasks undertaken under the scope of work, are in accordance both with NamPower's SHEW policies and procedures as well as to the requirements of this EMP.
- Put in writing a system of communication, in which all incidents and accidents are reported to the SHEW section
- Ensure that all employees receive a SHEW induction before the start of the project.
- Ensure that the work being done does not create a nuisance to any being working, residing or living on adjacent properties or within the immediate surroundings of the site

Compliance with all requisite standard safety regulations will reduce the risk in terms of Occupational Health and Safety to acceptable levels. The significance of the impacts for construction activities forming part of the operational phase would be mitigated by the effective implementation of this operational EMP. The NamPower Safety Officers will assist in ensuring contractor compliance with the NamPower SHEW requirements regarding health and safety.

NamPower has the right to ban any employee from the site, which have not attended a SHEW induction, until the time that they receive induction. NamPower also has the right to stop all construction activities if it is found that a gross violation of the EMP is taking place.

#### **RECORDING AND REPORTING**

The Environmentalist assigned by NamPower to the project, shall submit an environmental compliance report on a monthly or bi-monthly basis. These reports shall include a description of all activities on site, problems identified, non-conformances noted and remedial action implemented.

Records relating to compliance monitoring shall be kept on site and will be made available for inspection by relevant competent authority which in this instance will be the Ministry of Environment and Tourism. Matters shall also be discussed during site meetings and project meetings.

### **ENVIRONMENTAL MANAGEMENT AND TRAINING**

Before any work commences on site, the contractor shall ensure that adequate environmental awareness training of site personnel takes place and that all construction workers receive an induction presentation on the importance and implications of this operational EMP. The Contractor shall liaise with the Project Manager prior to the commencement date to fix a date and venue for the induction and to agree on the content.

The contractor shall provide a suitable venue and ensure that the specified employees attend the course. The contractor shall ensure that all attendees sign an attendance register. As a minimum, training should include:

- Explanation of the importance of complying with this operational EMP,
- Discussion of the potential environmental impacts of construction activities,
- The benefits of improved personal performance,
- Employees' roles and responsibilities, including emergency preparedness,
- Explanation of the mitigation measures that must be implemented when carrying out their activities,
- Explanation of the specifics of this EMP and sensitive areas,
- Explanation of the management structure of individuals responsible for matters pertaining to the EMP.

The contractor shall keep records of all environmental training sessions, including names, dates and the information presented.

#### **IDENTIFIED IMPACTS**

One of the main purposes of the environmental assessment process which was carried out for this substation was to understand the significance of potential impacts associated with a proposed activity. Issues or impacts of less significance were screened out of the assessment process, with supporting reasons to ensure that the study focuses on the potentially "significant impacts" identified for the proposed site. Potentially significant impacts may be experienced in terms of waste (hazardous and general waste) ,air quality, noise and socioeconomic aspects. It must be noted that no potentially significant impacts are anticipated since the proposed substations are located within an already environmentally disturbed area.

The following aspects were evaluated, and their impacts identified as follows:

- Social aspects
  - o Introduction of contractors to work environment
  - Nuisance to residents in nearby environment due to construction or maintenance
  - Improved energy supply
  - Employment opportunities
- Environmental aspects
  - Habitat destruction
  - Waste creation
  - o Erosion

# **OPERATIONAL PHASE EMP**

The section below summarises the Operational EMP, for each component of the environment and details mitigation measures to achieve these objectives. Each objective is also tied to a responsible person. This section covers activities related to operation.

| ASPECT | Management objective | MANAGEMENT AND MITIGATION MEASURES/COMMITMENTS | Responsible person |
|--------|----------------------|--|--------------------|
|        |                      |  |                    |

| Environmental<br>Awareness      | Minimise the occurrence of environmental impact on the work and surrounding area.  | av er be The molecular the re                          | Il staff to receive environmental wareness training and refresher nvironmental awareness training to e available when required. The contractor shall erect and aintain information posters at key cations on site. Il staff are to be made aware of eir individual roles and esponsibilities in achieving ompliance with the EMP.  | Project Manager and contractor |
|---------------------------------|--|--|--|--------------------------------|
| Construction site establishment | Ensure that environmental issues are taken into consideration in planning and construction of site establishment   | arthurin  Trof whilin particular stor accasts y Mi  Tr | method statement shall be rovided by the contractor prior to be only onsite activity which includes a layout of the construction camp the form of a plan. The plan should indicate the location key infrastructure and services there applicable, including but not mitted to offices, overnight vehicle arking areas, stores, stockpile, ydown area, hazardous material orage areas and placement of staff commodation, cooking and plution facilities, as well as wasterned wastewater management. Docation of the camp must be arefully considered and approved by responsible NamPower Project anager.  The contractor will not be allowed to amp on site. | Contractor                     |
| No-Go areas  Access Road        | Operation related activities inside No-Go areas is prevented to avoid environmental impacts to such areas.  Minimise impact on the environment                         | Er     tel     of     Ur     cc     No                 | reas outside the project area must be treated as no-go areas.  rect, demarcate and maintain imporary fence around perimeter any no go area.  Inauthorised access and construction related activity inside o-go areas is prohibited.  aximum use of existing roads and acks shall be implemented.   | Contractor                     |
| Waste water management          | through planned and controlled movement of vehicles on site  To avoid ,manage and mitigate potential impacts on the environment caused by waste water during operation | fa<br>dis<br>po<br>su<br>wa                            | ppropriate pollution control cilities necessary to prevent scharge of water containing plluting matter or visible uspended materials into atercourses or water bodies shall be designed and implemented.   | Contractor                     |

|                           |  | •                           | Runoff from the cement/concrete   |   |  |
|---------------------------|--|-----------------------------|---|---|--|
|                           |  |                             | batching areas shall be strictly controlled and contained water shall be collected, stored, either treated or disposed of-site at a location approved by the Environmentalist.                          |   |  |
|                           |  | •                           | All spillages of oil onto concrete surface shall be controlled by use of approved absorbents material and the used absorbents material disposed of at an appropriate hazardous waste disposal facility. |   |  |
| Solid waste<br>Management | To avoid ,manage and mitigate  | •                           | Sufficient ,covered waste collection bins shall be provided onsite.   | Contractor  |  |
|                           | potential impacts<br>on the<br>environment   | •                           | Waste shall be segregated into separate bins and clearly marked for each waste type.  |   |  |
|                           | caused by incorrect storage, handling and  | •                           | Staff shall be trained in waste segregation.  |   |  |
|                           | general disposal   | •                           | Bins shall be emptied regularly.  |   |  |
|                           | of general and hazardous solid waste.  | •                           | General waste shall be disposed of at recognised and registered waste disposal sites/recycling companies.   |   |  |
|                           |  | •                           | Hazardous waste shall be disposed of at a registered waste disposal site.   |   |  |
|                           |  | •                           | Records should be kept of the type and quantity of waste disposed of at the waste disposal site.  |   |  |
|                           |  | •                           | Under no circumstances shall any waste be disposed of, burned or buried on site.  |   |  |
|                           |  | •                           | Unutilised construction materials may not be left or randomly strewn around the site but should be removed once construction has ended and.   |   |  |
| Hazardous<br>Substances   | Minimise the risk of impact to the   | •                           | Drip trays must be available to contain accidental spills.  | Contractor  |  |
|                           | environment<br>through safe<br>storage, handling<br>use and disposal<br>of hazardous<br>substances | environment<br>through safe | •   | Machinery must be properly maintained to keep oil leaks in check. |  |
|                           |  | •                           | All hazardous substance will be stored in suitable containers as defined in the method statement or Material safety data sheet (MSDS).  |   |  |
|                           |  | •                           | Containers should be clearly marked to indicate contents, quantities and safety requirements.   |   |  |
|                           |  | •                           | Use and /or storage of materials, fuels and chemicals which could potentially leak into the ground must be controlled in a manner that prevents such occurrences.                                       |   |  |

|                     |  | • | All storage areas should be bunded. The bunded area must be of sufficient capacity to contain a spill/leak from stored containers.  |                                |
|---------------------|--|---|---|--------------------------------|
|                     |  | • | The contractor shall ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers.  |                                |
|                     |  | • | The tanks /bowsers shall be situated on a smooth impermeable surface(concrete) bund. The impermeable lining shall extend to the crest of the bund and volume inside the bund shall be 130% of the total capacity of the storage tanks/bowser (110% statutory requirement plus an allowance for rainfall). |                                |
|                     |  | • | Adequate firefighting equipment shall be made available at all hazardous storage areas.   |                                |
|                     |  | • | In an event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of at an approved hazardous waste dumpsite.   |                                |
|                     |  | • | No smoking shall be allowed within the vicinity of the hazardous storage area.  |                                |
|                     |  | • | Dirt drums shall be stored on a drip tray or within a bunded area.  |                                |
|                     |  | • | Safe waste disposal certificates for hazardous waste shall be maintained.   |                                |
| Batching plant      | Control concrete<br>and cement<br>batching activities<br>in order to prevent<br>spillage and | • | Concrete mixing shall be carried out on an impermeable surface such as on boards or plastic sheeting or within a bunded area with an impermeable surface).  | Contractor                     |
|                     | contamination of soil, surface water and ground water  | • | Bagged cement must be stored in an appropriate facility and at least 10m away from water drains.  |                                |
|                     |  | • | Hardened concrete from washout facility or concrete mixer must be either reused or disposed of at an appropriate licenced disposal facility.  |                                |
|                     |  | • | Any access sand, stone and cement must be removed from site on completion of the construction phase.  |                                |
|                     |  | • | Ready mix concrete is encouraged.   |                                |
| Protection of Fauna | Ensure care is taken to minimise   | • | The breeding sites of raptors and other wild birds species in close   | Contractor and Project Manager |

|                                  | disturbance to  | proximity to the Substation should   |     |
|----------------------------------|---|--|-----|
|                                  | fauna during  | be avoided as far as possible.   |     |
|                                  | operation   | <ul> <li>If any bird nests are found,<br/>NamPower SHEW Section to be<br/>notified immediately.</li> </ul>   |     |
|                                  |   | Contact experienced snake catcher in the event snakes are spotted on site, do not attempt to catch of kill snakes. Contact Simon at 0812339242 or William at 0818904841,available 24 hours a day.                                |     |
|                                  |   | <ul> <li>Report any incidents involving<br/>snakes to NamPower SHEW<br/>Section.</li> </ul>  |     |
| Protection of heritage resources | Prevent damage<br>and destruction to<br>fossils, artefacts<br>and materials of            | <ul> <li>Carryout general monitoring of<br/>excavation for potential fossils,<br/>artefacts and materials of heritage<br/>importance.</li> <li>Project Manager and<br/>contractor</li> </ul>                                     | t l |
|                                  | heritage significance.  | All work must cease immediately ,if any human remains or other archaeological chance find are uncovered. Such materials must be reported to archaeologist so that a systematic and professional investigation can be undertaken. |     |
|                                  |   | <ul> <li>NamPower SHEW Section must be<br/>notified immediately in the event of<br/>chance finds.</li> </ul>   |     |
| Safety of the public             | Reasonable<br>measures are<br>taken to ensure<br>the safety of the<br>public at all times | <ul> <li>Identify fire hazards, demarcate and restrict public access to the site.</li> <li>All unattended open excavations must be adequately fenced or demarcated.</li> </ul>   | t   |
|                                  | during operation.   | <ul> <li>Maintain an incident and complaints register.</li> </ul>  |     |
| Sanitation                       | Supply suitably located ,clean and well maintained  | Mobile toilets are to be installed onsite if no other ablution facilities are available.  Contractor   |     |
|                                  | toilet facilities to<br>minimise the risk<br>of disease and<br>impact on the              | <ul> <li>No indiscriminate use of the veld for<br/>the purposes of ablutions shall be<br/>permitted.</li> </ul>  |     |
|                                  | environment.  | Ablution facilities shall be located within 100m of the work area.   |     |
| Prevention of disease            |   | Free condoms must be provided contractor onsite at a central point.  |     |
|                                  |   | Ensure that the workforce is sensitised on the effects of sexually transmitted diseases, especially HIV AIDS.  |     |
|                                  |   | Information and education relating to sexually transmitted diseases to be made available to both construction workers.   |     |

| Emergency<br>procedure                                  | Enable a rapid<br>and effective<br>response to all<br>types of<br>environmental,<br>safety and health<br>emergencies. | <ul> <li>Updated emergency numbers to be readily posted on a notice board on site.</li> <li>NamPower Emergency Response Procedure is applicable and will be provided to contractor.</li> </ul>   | Contractor |
|---|---|--|------------|
| Increase in traffic and Safety and emergency situations | Minimise potential risk of injury and/or death to third parties.  | <ul> <li>The existing track will be used as an access route only.</li> <li>Access by third parties shall be recorded and all parties will be made aware of possible risks on site.</li> <li>Warning signs will be installed where necessary.</li> <li>Basic road safety behaviour for all contractors, NamPower employees and visitors, especially drivers, through training and awareness will be undertaken. Typical issues include:         <ul> <li>Keeping to safe speed limit of 20km/h.</li> <li>Ensuring that all drivers have valid licenses.</li> <li>Making sure that all vehicles are roadworthy.</li> <li>Zero tolerance for drinking and driving.</li> <li>Using lights appropriately for visibility.</li> </ul> </li> <li>Road accidents are considered emergencies and will be handled in accordance with the NamPower's Emergency Response Procedure(s).</li> </ul> | Contractor |
| Noise from transportation activities                    | Manage increase in disturbing noise levels, nuisance and health impacts   | <ul> <li>All noise generating activities will be kept to a minimum.</li> <li>No traffic, unless in emergencies or if continuous pouring of concrete will be allowed, between sunset and sunrise. Concrete pouring activities should be planned such that they occur during the morning hours to avoid late night driving.</li> <li>Operational activities will be limited to the daylight hours between sunrise and sunset to avoid undue noise disturbance.</li> <li>Compliance with relevant standards, specifications and legislation concerning noise will be adhered to.</li> </ul>   | Contractor |
| Dust and other air emissions                            | Manage increase in dust levels  | Excavation, handling and transport<br>of erodible materials shall be<br>avoided under high wind conditions   | Contractor |

|                          | (nuisance &                                    |  | visible dust plume is  |                            |
|--------------------------|--|--|--|----------------------------|
|                          | health impacts)                                |  | tion from all activities will d wherever possible.   |                            |
|                          |  | will be enf  | speed limit of 20 km/h<br>orced to control dust<br>and minimize incidents  |                            |
|                          |  |  | f construction material measures to prevent emissions.   |                            |
|                          |  | implemented<br>be controlled   | ssion measures shall be<br>d if necessary. Dust may<br>d by damping of the road<br>when necessary to<br>sance dust.  |                            |
|                          |  | maintained i   | and equipment will be<br>n good working order in<br>mise exhaust fumes.  |                            |
| Herbicide<br>Application | Minimize water and soil pollution              |  | application should be<br>by trained applicators<br>supervision of an   | Contractor and<br>NamPower |
| Site<br>Rehabilitation   | Minimize visual<br>and ecological<br>pollution | operational partial All areas operational subjected to All spoil and to a regist certificate of All equipments | all features , e associated with the chase that is not in use. disturbed by any activities shall be rehabilitation. I waste will be removed ered waste site and disposal provided. The control of the removed from site. | Contractor                 |

# **NON-COMPLIANCE PROCEDURES DURING OPERATIONS**

NamPower Regional Manager (Central), Area Superintendent and District Supervisor shall ensure that the requirements outlined in this EMP is implemented and enforced during the operation of the Tamarisk Substation.

# **ENVIRONMENTAL MONITORING AND AUDITING**

Environmental monitoring must be conducted at least once every month when operational activities are underway. Benefits derived from the monitoring and final audit process might include:

- identification of environmental risk;
- development or improvement of the environmental management system;
- avoidance of financial and time loss;

- avoidance of legal sanctions;
- increase in staff awareness;
- identify potential cost savings;

Commonly, the environmental monitoring or audit of a site will cover all management procedures, operational activities & systems, and environmental issues and will be carried out by the NamPower SHEW section.

# DOCUMENTATION, RECORD KEEPING AND REPORTING PROCEDURES

It is vital that an appropriate document handling and retrieval system be developed for all EMP documentation. This will ensure that there is adequate EMP documentation control and will facilitate easy document access and evaluation. EMP documentation must include:

- EMP implementation activity specifications;
- Induction records;
- site inspection reports; and
- monitoring reports;

Responsibilities must be assigned by the NamPower responsible persons/contractor to relevant personnel for ensuring that this operational EMP documentation system is maintained and that document control is ensured through access by and distribution to, identified personnel.

Document control is important for the effective functioning of any EMP. A document handling system must be established to ensure adequate control of updating and availability of all documents required for the effective functioning of the EMP. This procedure applies to the EMP as well as procedures and policies relating to the EMP, which must be controlled (i.e. identified, registered and changes recorded).