EMERGENCY ACTION PLAN

AD HYDRO POWER LIMITED

VPO Prini, Teh. Manali, Distt. Kullu

Himachal Pradesh-175143

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FOREWORD

Emergency situation may arise out of Fire, Flood, Electric Shock, Water leakage, Landslides, avalanches, road accidents, terrorist attack, air invasion, war and other natural disasters which may cause serious loss to life and property.

Under such situation, the risks should be foreseen to the extent possible well in advance and actions need to be taken, be well documented, practiced and revised as per situation. This will ensure preparedness in respect of all related aspects to avoid the disaster and to minimize the losses. It will also help to ensure immediate corrective action to plug the situation by arranging all means required to prevent any emergency occurrence.

Better management, planning, coordination, rehearsals, collective & sincere efforts by all of us at all times will help to achieve the desired objectives. The Emergency Action Plan for ADHPL has been prepared based on data / information available at our site office.

This Emergency Action Plan (EAP) will prove as an effective tool to handle the unforeseen situations to some extent. All concerned are requested to go through this Emergency Action Plan meticulously and in right earnest and also to educate their fellow colleagues accordingly. Deep involvement and co-operation of all concerned and their associates, is expected in effective implementation of this Emergency Action Plan (EAP).

Pankaj Kapoor
Project In-Charge
ADHPL, Prini

PREFACE

Design, construction, operation, maintenance and inspection of dams are intended to minimize the risk of dam failures and breakdown in the power house. Despite adequacies of these programs and their implementation, situations may develop sometimes leading to structural or operational failures resulting in emergencies.

The Central Water Commission (CWC) encourages and facilitates safety practices that will help reduce the risk to lives and property from the consequences of potential structural /operational failures. One example of which is enormous amounts of water flow out of a dam when it fails catastrophically or when excess water is released through the spillways to protect the dam from failure during extreme weather conditions. This phenomenon adversely affects people, infrastructure and the environment downstream of the dam. Concerted efforts are required from various organizations to protect lives and property and to reduce damage to the environment.

Emergency Action Plan helps in streamlining the efforts and brings about better coordination among different agencies to execute rescue and relief activities. CWC published the *Guidelines for Development and Implementation of Emergency Action Plans (EAP) for Dams* in May 2006. Experience gained and the technological developments that have taken place since then necessitated the need for comprehensive revision of these guidelines.

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OVERVIEW OF EMERGENCY ACTION PLAN

1.1 EMERGENCY ACTION PLAN

The emergency action plan is necessary for the size & magnitude of a project like ADHPL due to its location in the seismically active zone and its typical geology. The potential emergency may arise out of any situation involving floods due to breach or other structural failures as well as major floods without a breach, etc. Other unusual situations may also arise by sudden overtopping of the dam. Another factor involved, which may make the stability of the dam questionable, may be unusual seepage or piping through the dam or excessive uplift pressures beneath the dam body, sliding of the side slopes / embankments, earthquake damages and land slide/avalanche generated waves within the reservoirs, equipment malfunctions, foundation failure and sabotage. Any one of these factors can trigger the disaster which may disrupt normal human life in its established social traditional and economic system. The destruction of environment caused by extraordinary natural phenomenon or human created hazards results into hardship and sufferings beyond redemption unless outside help is managed to the affected populace. A hazard happens to be a perceived event which threatens both human life and property. A disaster is the realization of this type of hazard. It may turn out to be a disaster if proper management and mitigation measures are not ensured to alleviate the sufferings of the people of the affected area. Emergency Action Plan in its ambit identifies potential emergency condition at a project and specific preplanned actions to be followed to minimize property damages and loss of life. Broadly the causes responsible for such type of disasters may be classified as:

(a) Hydrological: Such as flooding due to large releases, seepage slumping, piping, embankment cracking, embankment deformation, movement of concrete section (sliding or overturning), settlement failure of spillway gates or supporting structures, outlet works, equipment malfunctions, etc.

(b) Earthquake: This natural cause which may have impact on the structural stability of the dam resulting into embankment piping, cracking and movement of concrete section.

(c) Other Events: These include equipment failure, security/criminal action, structural fire, land slide, wild fires, storm of extreme intensity, cloud burst and sabotage, etc.

Emergency Action Plan requires the project authorities to moderate or alleviate the problems at the project. It includes procedures and communication network to assist the authorities in issuing early warnings & notifications and messages to responsible persons downstream. In this E.A.P. potential emergency or imminent emergency arising due to hydrologic reasons as classified earlier, has been considered as most likely occurrence.

1.2 Hazard, Vulnerability and Risk Profile

An analysis of the natural hazards – Floods / Cloud Bursts, Earthquakes, Landslides and Snow avalanches, as a result of the cumulative impact of the multiple hydropower projects on ADHPL has been undertaken in the following section.

State of Himachal is prone to various hazards both natural and manmade. Main hazards consist of earthquakes, landslides, flash floods, snow storms and avalanches, draughts, dam failures, fires etc. The hazard which however, poses biggest threat to the State is the earthquake hazard. This became quite evident even in M 5.7 Dharamshala earthquake of 1986.

Another form of the natural hazards in the state is the frequent occurrences of landslides. The hills and mountains of Himachal Pradesh are liable to suffer landslides during monsoons. The vulnerability of the geologically young and not so stable steep slopes in various Himalayan ranges, has been increasing at a rapid rate in the recent decade due to inappropriate human activity like deforestation, road cutting, terracing and changes in agriculture crops requiring more intense watering etc. Although widespread floods problems do not exist in the state because of topographical nature.

According to data collected by HPSDMA the flood hazard vulnerability map indicates that overall vulnerability of state suggests that Chamba, Kinnaur, Kullu and part of Kangra and Shimla fall in very high vulnerable risk zone. Often flash flood due to cloudbursts, glacial lake outbursts and temporary blockade of river channels has been also observed. As a result, breaches in embankments and damage to various utilities such as irrigation, flood control schemes and houses are also observed.

A study conducted by Indian Meteorological Department has revealed that a total of 36 cloudbursts took place in Himachal from 1990-2001 - about three per year with a maximum of seven in 2000. Out of the 36 cloudbursts, 15 were reported in Kullu. This indicates that Kullu district is more prone to cloudbursts than any other area.

a. Floods/ Cloud burst and flash floods:

Upstream from Manali, the channel morphology of the Beas River is indicative of periodic, high energy flooding. However such events have not been observed in Allain and Duhangan tributaries of the Beas River. Occasionally, as in early July 1993, early monsoon rainfall coupled with late snowmelt at higher elevations produced a strong flood flow. Other high magnitude flood events occurred in late August and early September in each of 1994, 1995 and 1996. Likewise, coincident flood flows have occurred on major tributaries of the Beas, such as Manalsu stream.

The following table presents the list of recent major Flash Floods & Cloudbursts that hit Himachal Pradesh.

List of Recent major Flash Floods & Cloudbursts in Himachal Pradesh

S. No	Area/Damages	Date
1.	Bahang in Kullu Valley (near Manali) 2 people lost lives, property, houses damaged	July 24, 2003
2.	Balh valley in Mandi district in Gaggal area heavy loss of crops, fields and property reported.	July 20, 2003.
3.	Kangni Nalla (Solang) in Manali area cloudburst left BRO labours 36 dead 20 still reported missing.	August 07, 2003
4.	A cloudburst in Rohtang area had washed away two bailey bridges near Palchan and Dhundi villages besides leaving Manali - Rohtang road damaged at several stretches due to massive landslides triggered by cloudburst.	August, 2012
5.	A flash flood occurred due to cloudburst in Sholding Khud that caused heavy loss of life and property in the Sholding village and had blocked the flow of Satluj for 30 minutes.	September 29, 1988,
6.	In Kinnaur district, the Satluj was flooded in June 2005 after a flash flood of huge magnitude due to sudden breach of Parichu (river) in the Chinese territory. "It led to an extensive damage to about 350 kilometers of road length at various places from Samdo to Gobindsagar (Bhakra Dam).	June 2005
7.	115 people were killed after a cloudburst hit Chirgaon town of Shimla district. Around 3,000 people were left homeless.	August 15, 1997
8.	40 people were killed due to a cloudburst in Shilagarh area of Garsa valley in Kullu district.	July 16, 2003
9.	52 people were killed after cloudburst ravaged Bhavi village in Ghanvi area of Shimla district.	August 14, 2007
10.	Cloudburst left several government buildings and bridges damaged in Nirmand area of Kullu district.	August, 2009
11.	Around a dozen villages were affected by a cloudburst in Kharahal valley of Kullu.	September, 2010

12.	Cloudburst in upstream area of Malana Nalah in Kullu district damaged the desilting chambers of MPCL plant.	12 August, 2019
13.	Excessive rains in Beas basin causing flooding of the stream in Manali area damaging many public and private properties.	22 September, 2019

b. Earthquakes

With regard to seismic activity, the project area lies within Zones IV and V, which are characterized by frequent occurrences with Richter magnitudes varying from 5 to 8. Notable earthquake events in Himachal Pradesh include 1905 Kangra earthquake and 1975 Kinnaur-Spiti earthquake. This is seismically a very active region and earthquakes must be factored into any consideration of risk from natural hazards.

c. Landslides

Landslides are common events in the geodynamical sensitive Himalayas, especially during high intensity monsoon rains. Oversaturation of slopes fractured by tectonic forces, compounded by anthropogenic interference, leads to frequent slope failure in this high mountain system. Over the years, human activity has contributed to an increase in slope failures in the Himalayas because of the expansion of road networks, settlements, and other developmental activities. Apart from disruption to road transportation and high-sediment delivery into the river system, the landslides also contribute to loss of human lives. A devastating landslide occurred on 12 September, 1995 near Luggar-Bhatti, Kullu, Himachal Pradesh, and killed 65 people.

d. Rock fall and Snow Avalanches

Rock falls and avalanches are common in high mountain environments. As per EIA report of the project, recent history does not provide significant examples of specific events apart from minor slope failures associated with extreme bank erosions. Progressive failure is likely to be still occurring. Minor rock fall

activity occurs from most vertical rock slopes throughout the area and is one of the ongoing processes that lead to the build-up of alluvial deposits.

High snowfall and the development of a deep snow cover makes the region, including parts of Spiti, Kinnaur and Lahul, one of the most avalanche-prone, inhabited areas of the Himalaya. Because of this and the hazard to habitation and transportation, the Indian government created the Snow and Avalanche Study Establishment at Manali. Snowstorms and cold spells occur from time to time in the region. From the hazard perspective, these events are most dangerous when they are least expected

e. Outbreak of epidemic/pandemic

This natural disaster covers the outbreak of infectious diseases caused by bacteria, viruses or fungal or any other infections over a large geographical area and infecting the large number of people very quickly. The epidemics or pandemics are declared by the Governments. The ADHPL being an essential services sector shall obey all guidelines issued by the Central, State and local Governments from time to time in case of such scenario. The ADHPL shall also take care of its employees and guide them from time to time for preventive measures as directed by the guidelines issued by the health authorities and the Government.

S. No	Area/Damages	Date
1.	COVID 19 pandemic started from Vuhan China in December, 2019 and still continues to kill people approximately 4.50Mln people have died till date due this pandemic.	December 2019 to till date

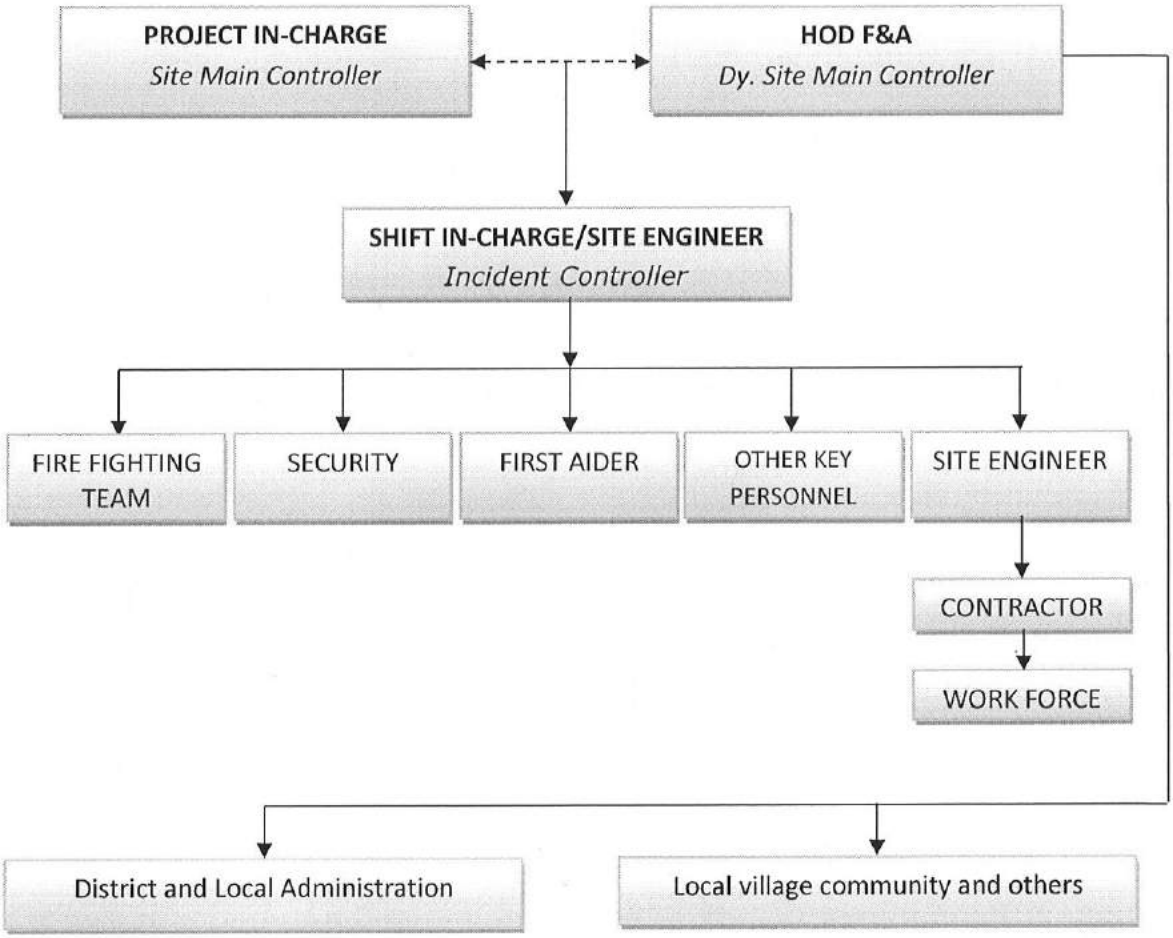
Chapter 2

THE EAP NOTIFICATION, COMMUNICATION AND RESPONSE PROCESS

2.1 Emergency Organization

An emergency organization is established based on nature of emergency at ADHPL site. The organogram for the emergency management team showing the reporting of various key members are as under:

Emergency Organization



List of Key Personnel is attached as *Annex 3*

2.2 Emergency Control Center

To coordinate with emergency situation at ADHPL, conference room at first floor in administration building shall be operated as an Emergency Control Center. Control room shall be equipped with necessary communication facilities, documents, drawing and Computers etc.

2.3 Notification, Communication and Mobilisation

1. In an emergency event from any of the plant sites, all telephone calls shall be made to ADHPL's reception desk. The duty officer/security guard shall then inform HOD EHS&S Department of the emergency. The list of emergency numbers is attached as *Annex 2*

2. The Head of EHS&S Department, or his notified assistant in his absence, upon receiving the emergency notification, shall inform the Site Project In-Charge (PI) of the emergency and the respective HODs.

3. The respective HOD shall mobilise their respective on-call resources at ADHPL office, Prini, Manali.

4. ADHPL's Head Office (HO) in Noida shall be informed of emergency events occurred in the project by Project In-charge or by the next senior company employee present in case of his absence. This also applies to emergencies event in partner-operated activities involving Statkraft personnel and expatriated family members.

5. HOD EHS&S shall in liaison with the senior management team, decide about future notification and what additional on-call resources are required to be mobilised at the site of incidence.

6. It is the Project-In-charge's responsibility to call for the first meeting of the disaster management team at the earliest possible instance and Government and Local authorities shall be notified in accordance with the emergency notification and response plan.

7. In case of death of any expat employee, relevant Embassies shall be informed by ADPHL office. Joint venture partners shall normally be notified in accordance with the local emergency response.

8. The following types of events will typically require further notifications to ADHPL HO, Noida and Statkraft, New-Delhi Offices.

   - Incident at work or business travel involving ADHPL employee or Statkraft personnel or expatriated family member resulting in fatality or life threatening injury that will lead to or likely to lead to permanent disability.
   - Kidnapping or hijacking of ADHPL employee, hired personnel or expatriated personnel or his/her family member;
   - Terrorist threat or bomb threat with potentially serious or very serious consequences;
   - Partial or full evacuation from geographical area due to an acute conflict or natural catastrophe (force majeure or act of God);
   - Incident with loss or damage exceeding Rupees 2.0 lac

9. Any other incident that according to the judgment of HoD EHS&S that requires the attention of ADHPL Management at HO.

10. The notification shall consist of the following information:

1.	**WHO**	Name and organisation unit of the person who notifies, contact telephone number.
2.	**WHAT HAS HAPPENED**	Short description of the emergency and injury/damage (if relevant)
3.	**WHERE AND WHEN**	Time and place of emergency
4.	**NUMBER OF PERSONS INVOLVED**	Number and name of persons involved in the emergency
5.	**NEEDS OF ASSISTANCE**	Type and extent of assistance needed
6.	**REMEDIAL ACTIONS**	Remedial actions that have been implemented locally
7.	**OTHERS NOTIFIED**	Other persons/organisations that have been notified

Note: *- Schematic presentation of Emergency Notification and Response Plan (ENRP) with mobile numbers is attached as Annex -1*

2.4 Categories of Emergencies

a. *Tier 1 (Blue):*

An incident which is classified as "minor" or "local consequences" and which can be handled by existing resources. Hence no external resources or support is required in such an incident.

b. *Tier 2 (Orange):*

Such an incident represents a potential for injury or moderate damage to equipment, and requiring support from external organisation to control the emergency and manage its impact. Tier 2 Incidents may also involve possible damage/impact to third party

c. *Tier 3 (Red):*

An incident will be classified as Tier 3 where the incident is of a major catastrophic event including force majeure or act of God, involving multiple injuries, fatalities, major fires, environmental damage, toxic gas releases, significant threat to the environment. Tier 3 Incident requires comprehensive strategic response to address issues which may involve national media, local government and third party directly or indirectly and requires the intervention of external emergency response team to control the incident.

2.5 Alert level for emergency conditions

Type of Alert	Alert Level	Situation	Engineer In-Charge	Response system
Internal Alert	Blue Level Alert	No immediate detection of anomalies in the Dam, Penstock, Power House and other water conducting components or other events that do not compromise the structural dam safety and other structures. Situation is stable or developing very slowly. No consequences are expected in the valley downstream of the dam. -Small earthquake observed and seepage discharge increased marginally. -Leakage observed from spillway radial gates of dam & other structures of the Project. Any other observation being felt at the time of emergency in the structures at ADHPL Project.	1. Measures to solve problem. 2. Give internal alert signal of blue level. Inform to (i) VP O&M (ii) VP F&A (iii) Sr. Manager EHS (iv) Site In-charge (v) Department In-charge	As per ENRP
Internal Alert	Orange Level Alert	-Existence of anomalies or events that might compromise up to some degree & assuming that eventual small consequences downstream can happen. -Reservoir level and existence of adverse of meteorological conditions.	1. Measures to solve problem. 2. Give internal alert signal of Orange level. 1. Measures to	As per ENRP

Type of Alert	Alert Level	Situation	Engineer In-Charge	Response system
		-Little leakage from the penstock is observed. -Stress meters in IR giving compressive stress higher than permissible limit. -Earthquake of mag. + 0.01 g observed and seepage discharge increased in dam galleries. -Massive snow/land slide observed in IR area. -Tunnel collapse partial plugging the ingress/egress from PH -Wide crack observed in rocks of underground PH and access tunnels -Sabotage/Bomb threat and situation developing serious	solve problem. 2. Give internal alert signal of blue level. Inform to (i) VP O&M (ii) VP F&A (iii) Sr. Manager EHS (iv) Site In-charge (v) Department In-charge (vi) HO Noida	
External Alert	**Red Level Alert**	-Situation of inevitable catastrophe and heavy inflows are coming due to continuous rain in the catchment. -Flash floods expected as per IMD Report. -Cloud burst shooting the inflows coming into reservoir and overtopping is imminent. - Earthquake observed causing severe damages to the multiple structures of	1. Measures to solve problem. 2. Give external alert signal of Red level. 3. Implement incident command system.	As per ENRP

Type of Alert	Alert Level	Situation	Engineer In-Charge	Response system
		IR, penstock and PH. -Heavy land slide/avalanche occurred into the IR causing severe damages to its structures -Heavy leakage observed through machine which is increasing rapidly. -Emergency arising due to accidental fire in cable galleries. -Potential emergency situation developed due to sabotage/ bomb threat.	Inform to (i) VP O&M (ii) VP F&A (iii) Sr. Manager EHS (iv) Site In-charge (v) Department In-charge (vi) HO Noida (vi) Tehsil and Distt. Admin. Warning-Local population to be ready for evacuation.	

2.6 Pre-Disaster Preparedness Plan

During Non-Emergency (Pre-Disaster) Phase, ADHPL shall assume the following roles and responsibilities:

- Develop a Disaster Management Plan in accordance with the associated risks and past experience.
- Set up Disaster Management Room and maintain the minimum required inventory required for search, rescue and evacuation operations and also update it from time to time.
- Set up a Wireless Station for communication during emergency.
- Identification of weak and vulnerable zones through Hazard Identification and Risk Analysis of the project area.
- Conduct awareness generation training programs and Mock drills from time to time on different subjects.
- Liaison with govt. bodies, if required.
- Select and designate shelters for rescue and relief operations in case of an emergency.
- Arrange vehicle for relief and rescue operations.
- Post disaster damage assessment and return back to business.
- Restoration of damages of buildings, electrical installations, water supply and relief materials.
- Review and evaluate appropriate Early Warning Reports in accordance with identified risks and vulnerabilities as well as preparedness plan.
- Attend seminars/trainings /workshops conducted by the govt. departments

2.7 Communications instruments

An important key to effective emergency response is an effective communications system. During an emergency, the landline telephone system will be used to the extent possible. In case of system failure or a power failure, landline phones may not function. An alternative in most departments is the use of mobile phones and VHF radios will be used for communication. Most installations are equipped with fire alarm systems that continuously monitor for alarms and trouble situations.

a. Communication for internal and external sources shall be of the following equipment's:

- Mobile Phones
- Wireless Handsets
- Intercom Telephone/Landline
- Written messages by faxes, emails and SMS

b. Access to Site:

- By vehicle up to a maximum approachable point
- On foot
- Usage of rescue equipment

c. In hours of darkness:

- Emergency lights
- Torch lights etc.

d. Emergency Power Sources:

- Diesel Generating (DG) sets
- Emergency lighting system

- Torch lights
- Auxiliary or standby power supply for intake structure or residential premises

e. Warning Systems:

- Hooters located at prominent places such as Allain barrage Site, Power House, Duhangan Weir site, TRT, ADIT–1 and RD 2000 Duhangan Road
- PA System
- Any other means of communication as applicable.

Chapter 3

ELEMENTS OF EMERGENCY ACTION PLAN

3.1 Introduction

The State of Himachal Pradesh has an enormous hydro-potential. The major river systems of the region are the Chenab, the Ravi, the Beas, and the Satluj. Through preliminary hydrological investigations, it has been estimated that about 20463.5 MW of hydel power can be generated in the State by constructing various hydel projects on these rivers or their tributaries.

Hydro Power sector deals with underground/surface power houses and other surface structures like dams, weirs, barrages in addition to electrical / mechanical equipment as in all other power stations. The possibility of disasters due to natural calamities in hydro sectors is equally high as in other sectors.

An Emergency Notification and Response Plan is a document that identifies potential emergency conditions and specifies preplanned actions to be followed to minimize damage to property and loss of life. The Emergency Notification and Response Plan specify actions that Project Authority should take to moderate or alleviate the problems. It contains procedures and information to assist the authorities in issuing early warning and notification messages to all responsible authorities for organizing early and proper response to any kind of emergency.

Considering the deployment of manpower and significant resources, a well laid down emergency action plan needs to be worked out to contain and control the potential emergency situations: Personal injuries, Fire & Explosions, failure of structure, flooding in underground facilities, crane/vehicle accidents, toxic leakage from tunnels, terror threat, natural calamities and workmen unrest may directly or indirectly aggravate the conditions at the plant.

An intermediate storage reservoir has been provided to meet the peaking daily power requirements. The live storage capacity of intermediate Reservoir is 21.7 Ha-m. Full reservoir level is at El. 2747.80 m and MDDL is at El. 2734.0 m. In the reservoir, there is a low level water channel 7.5 m wide with bottom El. of 2732.0 m. This channel runs between Allain tunnel outlet structure and power intake. The reservoir bottom consists of concrete panels, with slope of 0.2% for fast drainage and a concrete

retaining wall all around with top EL 2749.0m. An un-gated overflow structure is provided to discharge surplus water to downstream nearby Maralsu Nallah.

A drainage gallery 2.0 m x 2.5m has been provided all around the reservoir walls at invert level of EL 2732.2m. An access shaft (0.9m x 0.9m) with ladders is also provided near the power intake. The drainage gallery drains the seepage water into the overflow structure and further into Maralsu nallah.

3.2 Objective

The main objectives of emergency response plan for Allain Duhangan Hydro Power Limited (ADHPL) are:

- To provide guidelines to control Emergency situations,
- To minimize its impact on personal/loss of life,
- To minimize the damage to property and
- To respond to any emergency situation in an organized way.

3.3 Scope

The scope of this Emergency Notification & Response Plan includes ADHPL's plant operation and maintenance works. This procedure applies to all ADHPL and TL employees and its associates who work within plant premises.

3.4 Inundation Maps

Inundation map is attached as *Annex 10*

3.5 Responsibilities

ADHPL administration is responsible for the upkeep and maintenance of plant and its water conductor systems. However in order to make emergency plan more effectively implemented, the personnel manning the project should be aware of the responsibilities at the time of developing inevitable or imminent situations. Such situations demand that concerned will be responsible to perform pivotal role at site of emergency on the project. Above all the concerned engineers/employees would be handling the situation through the active participation of the other associates, including all related vital structures.

a) **ADHPL Project In-charge:**

1. Provide leadership and guidance to the emergency management team.
2. Immediately on receiving message regarding emergency he will rush to ADHPL Emergency Control Center – conference room at first floor in Administration building.
3. He shall be in regular touch with Shift Engineer – Incident controller and guide him accordingly.
4. He shall be in regular touch with CEO and Head office, Noida, as per the requirement of emergency situation.
5. Inform and appraise at regular intervals regarding the situation to the top management.
6. Take strategic and technical decisions in line with the accident/emergency scenario to terminate the cause of emergency.
7. He shall monitor overall situation and mobilize resources at sites.

b) **HOD Finance & Administration (F&A):**

1. Shall be responsible for the financial provision in an emergency including medical expenses for the treatment of patients.
2. Shall be responsible to the PI for all financial matters related in an emergency.
3. Shall be responsible to provide the financial assistance for the procurements of appropriate Personal Protective Equipment (PPE) for usage by personnel in an emergency as recommended by HoD EHS&S.

c) **HOD Personnel & Administration (P&A):**

1. Shall assume responsibilities of site main controller in absence of project in-charge.
2. Shall ensure the implementation and follow up of this procedure at ADHPL Site and Temporary Facilities including Colony and IBEX Accommodation Area.
3. Shall be responsible for the provision of all transportation and logistics requirements.
4. Shall be responsible for liaison with Civil Administration of Manali, Police and Fire Brigade (at Manali & District Kullu)
5. Shall be in contact with the Company Doctor for transportation of injured personnel to the near-by medical hospital(s) in Manali and or Kullu.

d) **HOD Environment, Health, Safety & Social (EHS&S):**

1. Shall develop and maintain rosters for personnel on call.
2. Shall develop and maintain instructions for :
   - Head counting in assemblies
   - Test of communication means
   - Handling of injured personnel
   - Evacuation of personnel
   - Resources call outs (Manali Police & Fire Department or Kullu, Fire Dept Emergency Response Team).
3. Audit and Control of due implementation of the Emergency Notification & Response Plan.
4. Shall conduct frequent inspections on site, related to the emergency and direct appropriate corrective actions.
5. Shall ensure the Emergency Notification & Response Plan is cascaded to CONTRACTORS and all associates.
6. Shall ensure adequate numbers of team members have been assigned evacuation duties and provide with the necessary training for them to perform duties in the event of evacuation.
7. Shall ensure the availability and suitability of dedicated evacuation provisions including rations, medications, communications etc.
8. Shall ensure appropriate personnel are trained in the emergency response action process.
9. Shall prepare Emergency drills reports for the SITE EHS Advisor and CONTRACTOR Site Management team.
10. Shall organize, coordinate and directly participate in the Emergency Training activities on site.

e) **Company Doctor:**

1. Upon receiving message of an emergency, anticipate the injury and do advance preparation accordingly as per medical response plan.
2. Send the Ambulance to incident site along with necessary paramedical staff.
3. Liaise with other hospitals in case the injured is required to be shifted to their facility.
4. Inform HOD EHS&S.

f) **Manager EHS&S:**

1. Shall resume the duties and responsibilities of HoD EHS&S as designated in his absence.
2. Shall assist HOD EHS&S in an emergency and ensure that HOD EHS&S is constantly updated of the emergency.

g) **DGM (Civil):**

1. Immediately on receiving message regarding emergency he will rush to ADHPL Emergency Control Center – conference room at first floor in Administration building.
2. Shall provide all necessary assistance to site main controller.

h) **Shift In-Charge/Shift Engineer – Incident Controller:**

1. On noticing or receiving message of an emergency from field, rush to the emergency site and act as an Incident controller.
2. He will be the overall in-charge of the situation and mobilize resources.
3. He will assess the situation and take necessary actions to control the emergency and give necessary instructions to the field personnel.

4. Ensure safe evacuation of field personnel, if required liaise with Section In-charge and Project In-charge – Site Main Controller, Medical and security services.
5. He shall be in contact with Site main controller, keep him informed about site situation and seek directives for mitigation of emergency.
6. Instruct site engineer for emergency control and rescue measures.
7. Instruct to barricade the affected areas.
8. Arrange for transporting of casualties, if any.
9. Keep in constant touch with site engineer, Firefighting team and rescue team.

i) EHS Engineer/Officer:

1. Shall ensure that an adequate numbers of team members have been assigned evacuation duties and provided with the necessary training for them to perform duties in the event of evacuation.
2. Ensure the availability and suitability of dedicated evacuation provisions including rations, medications, communications etc.
3. Prepare Emergency drills reports for the SITE EHS&S Head and CONTRACTOR Site Management team.
4. Organize, coordinate and directly participate in the Emergency Training activities on Site and in Camp Area.
5. Ensure adequate numbers of team members have been assigned evacuation duties and provide with the necessary training for them to perform duties in the event of evacuation.

j) **Rescue Team:**

1. Rescue team to report to incident controller with required rescue gears and protective equipment.
2. Rescue team to take instructions from incident controller or his designate
3. The rescue equipment are available in the Disaster Management Room.

k) **First Aider:**

1. He shall know, understand and comply with this ENRP
2. The first Aider shall provide first aid to all injured after securing the scene safe.
3. He shall organise for mobilisation of the injured to the hospital
4. He shall maintain the record of injured and shall inform the Company Doctor

Detailed Notes on First Aid are attached as Annex 6 and Rescue and transportation of Injured are attached as *Annex 7*

l) **Employees:**

All employees shall:

1. Know, understand and comply with this Emergency Notification & Response Plan.
2. Must ask their immediate Engineer, whenever unsure, of the instructions for emergency tasks given to them.
3. Follow instructions of site Engineer EHS Officer during an emergency.

3.6 Emergency Scenarios and Response Plan

Various scenarios that are anticipated to cause emergency at ADHPL site are discussed below in brief along with general guidelines.

a) Personal Injuries:

In spite of putting best efforts some technical failure or human error may lead to personal injury at site. Guidelines for actions to be taken in case of personnel injuries are as under:

1. Contact ADHPL office reception at Phone numbers: **09816103380, 09816103329, 09816050770**
2. Quote your name and location with identification point of that location while reporting any accident/incident or a near miss. State the nature of accident or incident and hold the line till told to do so. It is equally important to report even when there is no injury or damage.
3. ADHPL reception to follow site emergency notification plan.
4. Provide relevant First Aid if competent to do so or rush the victim to the First Aid Center / ADHPL Health Center at Prini if able to do so.
5. Stay with the injured person until Medical Assistance arrives.

b) Fire/ Explosion:

Considering the use of combustible materials, electrical cable, gas cylinders etc. in the close vicinity of hot work, possibility of Fire and explosions at plant area can't be ruled out. The O&M operation also have potential of fire due to short circuit or equipment failure during operation. Guidelines for actions to be taken in case of fire are as under:

6. Contact ADHPL office reception at Phone numbers: **09816103380, 09816103329, 09816050770**

- Give your Location, Name and identification point of the area where you are located. Speak slowly and calmly.

- ADHPL reception to follow site emergency notification plan.
- Inform the persons nearby you or shout for help
- Do not Panic, there is always sufficient time for an emergency telephone call.
- Try to put out the Fire with the nearest available Portable Fire Extinguisher if you know how to operate.
- Go to the nearest Site Office and try to inform more people for any help.
- Walk, do not run and follow the shortest escape route, if it is safe to do so.
- Do not make any attempt for collecting valuables or personal goods.
- If either or both the machines are running, after informing the workmen rush to the designated assembly point.
- Under no circumstances put your own life at risk.
- If the Fire appears too large to tackle with fire extinguishers or available resources, leave it to the qualified Fire Fighting Services.
- Leave the Building / Site in an orderly manner to the designated assembly point.
- In case of fire in power house following additional action must be taken

a. Shift engineer to ensure affected circuit is de-energized immediately.
b. All personnel should escape through Fire escape route (Lower Escape tunnel) as reasonably practical to do so.
c. Shift Engineer to ensure head count at assembly point and report to Site Incident controller.
d. All personnel to remain at assembly point unless instructed otherwise.

Rescue and evacuation of an injured/burned/unconscious person due to fire:

In an emergency, there are many ways to move an injured to safety, ranging from "one-person carries" to "stretchers". The injured person's condition and the immediacy of danger will dictate the appropriate method, but it is important to keep in mind that the victim should be given all necessary first aid before moving. At times it will be necessary to move the injured immediately, without regard to the severity of the injuries.

***MANAGEMENT OF EVACUEES DURING AND POST FIRE SCENARIO*:**

1. **Management of Injured Persons During Fire Scenario:**

a) **Management of Personnel with minor injuries:** The persons with minor injuries shall be treated immediately by the trained first aider and the patients need not to be referred to the secondary or tertiary healthcare facility. The procedures are generally considered first-aid treatment (e.g. one-time treatment and subsequent observation of minor injuries) and should not be classified as a reportable injury if the work-related injury does not involve loss of consciousness, restriction of work or motion, or transfer to another job.

b) **Management of Personnel with major injuries:** The injured persons shall be provided first aid and immediately referred to the secondary or tertiary healthcare facility. A track of improvement of general condition of the patient shall be maintained until the discharge of the patient from the hospital and return to the work.

c) **Management of Personnel with critical injuries:** After triage, the injured persons shall be provided first aid and immediately referred to the secondary or tertiary healthcare facility and shall be accompanied by a trained paramedic all the way to the healthcare facility. A track of improvement of the general condition of the patient shall be maintained until the discharge of

the patient from the hospital and return to the work. Disability evaluation and further rehabilitation as per the policy norms shall be carried out within due course of time.

2. **Management of Evacuees After Fire Scenario**

a) **Rehabilitation of persons with disabilities:** Rehabilitation of people with disabilities is a process aimed at enabling them to reach and maintain their optimal physical, sensory, intellectual, psychological and social functional levels. Rehabilitation provides disabled people with the tools they need to attain independence and self-determination.

Rehabilitation guidelines, as per HR Policy, provide practical suggestions on how to develop or strengthen the people with disabilities and their families. Rehabilitation of disabled is implemented through the combined efforts of disabled people, their families and communities, and representatives of the appropriate health, education, vocational and social sectors.

b) **Rehabilitation of persons with Post Traumatic Stress Disorder:** The workers who have been directly or indirectly involved in fighting the fire scenario may suffer from psychological difficulties in joining back at the job. The worker may feel horrified and stressed upon due to the scenario he has been in and may require some help to come out of the gruesome situation. Some workers may require some sessions of psychotherapy by an experienced doctor or a psychologist, while others may require change of job.

c) **Compulsory general health checkup:** In addition to above all, as a cleanup measure, the staff/ persons involved directly or indirectly in the fire incident, will need to go through a general medical check-up before they join back the duties, after dousing the fire.

d) **Rescue from Electrical Contact:**

Rescuing an injured who has received an electrical shock can be difficult and dangerous.

You must not touch the injured person's body, the wire, or any object that may be connected with electrical system and conducting electricity!

Look for the switch and turn the power off immediately. Do not waste time hunting for the switch, every second is important. If you cannot find the switch, try to remove the wire from the injured person or the injured person from the wire. Use a dry broom handle, branch, pole, oar, board, or similar non-conducting object. An old favorite is to remove the injured person from an electrical contact using the uniform belt. Be careful, the belt was made of cotton, but is now made of nylon and other conductive material. When you are trying to break an electrical contact, always stand on some non-conducting material.

e) Mishaps/ Failure of structures:

Mishaps involving failure of crane, big structures (tunnel collapse, IR failure, dam failure etc.), vehicular accident etc. can also lead to an Emergency situation at construction sites or at plant. Guidelines for actions to be taken in case of such situations are as under:

1. Inform ADHPL reception at once.
2. Try to rescue personnel trapped / involved.
3. Barricade / cordon off the area to prevent entry of personnel in affected area.
4. Security shall ensure movement in affected area.
5. Package/ Site manager shall coordinate with P&A, Security, EHS&S and contractors working in affected area to contain and control the situation.
6. Personnel not involved in mitigation operation shall be directed to assembly point.
7. Contractors shall ensure that their workmen are away from emergency site, not gathered or spreading rumor.
8. Government agencies must be notified in case of flooding of intake, IR or Powerhouse

9. Failure of dam/reservoir may result in sudden release of water and can cause flooding of downstream areas (covered under flooding).

f) Adverse Weather Conditions & Natural calamities (Flooding):

Adverse Weather Conditions like heavy rain fall, cloud burst and heavy snow fall and Natural calamities like floods can also lead to Emergency at work sites/remote sites.

Types of floods Possible in and around ADHPL

River flooding: River flooding occurs when heavy rains or rapid snowmelt cause rivers to rise and swell.

Flash Floods: Flash floods usually result from intense storms and cloud bursts dropping large amounts of rain within a brief period. Flash floods occur with little or no warning and can reach full peak in only a few minutes.

Natural Reservoirs: When landslides, wooden logs and ice slabs pile up and obstruct the flow of water, they form a dam, causing pooling of water and formation of natural reservoirs. When the pool of water is released suddenly into the stream heavy flooding can occur in low lying area.

Dam Failure/Pressure Shaft Failure: Dam and Pressure Shaft failures are potentially the worst flood events. The failure is usually the result of neglect, poor design, or structural damage caused by a major event such as an earthquake or sabotage. When a dam fails or pressure shaft ruptures, a gigantic quantity of water is suddenly let loose downstream, destroying anything in its path.

Public warnings

Flood Warning: Flooding is possible and the situation could worsen, so watch water levels, stay tuned to local radio or TV and local authorities for further advisories. At this time you should move pets, vehicles, food and valuables to safety.

Flash Flood Warning: A Flash Flood Watch will be issued for serious situations in which life and/or property are in danger. A Flash Flood Warning will be issued in response to a few hours of locally heavy rainfall, a dam or pressure shaft failure.

Release of Water from Dams/IR: in case of sudden release of water from the upstream structures the local bodies and Govt. departments should be informed in advance. In addition to the above the siren is to be blown before releasing water as mentioned below in the table.

In case of sudden rise in water level of water in the streams or ingress of excess water, the water may be required to be released back into the streams suddenly. In such cases the siren is blown before the release of water as mentioned below in the table.

S. No	**Type of Emergency**	**Duration**
1.	Normal dam/Power house complex operation	Continuous 1 (one) minute
2.	In case of fire	10 sec. on, 5 sec. off, 5 times
3.	Emergency situation/ Flood release	20 sec. on, 5 sec. off, 5 times
4.	Clear	Continuous on for 3 minutes only once

Guidelines for tackling such conditions are as follows:

1. EHS &S department to monitor weather forecast and inform all HODs and Project In-charge.
2. Site engineer to inform package manager of the events at site.

3. ADHPL reception to be informed which will further follow emergency notification plan.
4. Road team leader to inspect the access roads leading to Allain and Duhangan sites and give clearance for road traffic.
5. In case of heavy ingress of water in Allain stream due to heavy rain fall/ cloud burst/flash food etc. the incident shall be immediately reported. The information shall be communicated swiftly to the site main controller and accordingly communication shall be made to civil administration and local bodies to facilitate quick evacuation of the downstream inhabitants along Allain and Duhangan streams.
6. In case of failure of access through road due to heavy snow fall, shift change will be carried out through chopper, if available. For temporary road blockage due to some reason other than blockage of road due to heavy snow deposition, shift change will be carried out on foot as per decision taken by the project Management on case to case basis.
7. For winter season, as the road blockage appears frequently for both Allain & Duhangan sites, in this case if the road access is expected to take more than one week time for restoration, the shift change will be carried out on weekly basis through chopper, if available, however for any emergency such as medical emergency, the services of chopper, if available, can be hired for shifting of site personnel prior to one week time also.
8. For conditions when chopper facility is not available due to bad weather condition or any other reason, designated rescue team to be involved in shift change / rescue process.
9. Govt. Administration departments to be notified by P&A in case requirement arises.
10. Winter preparedness meeting shall be conducted by project in-charge to identify potential difficulties/hazards during winter season and ensure that mitigation measures are in place in time.
11. Before snowfall at higher elevations, P&A Department in coordination with shift engineer/ Package manager must ensure following,

a. Sufficient ration, fuel wood, fuel and first aid medicines for one month duration should available at Allain barrage, Intermediate Reservoir and Duhangan weir site.
b. Personnel at these locations are provided with adequate Warm clothing and beddings

12. EHS Department to ensure all site offices are inspected with focus on Integrity of structure, Insulation, electric fittings, and insulation of water pipes before the winter season and the same is rectified.
13. EHS Department to ensure that rescue team is constituted; required resources are identified and brought to the notice of Project management for timely arrangement.
14. In case of flooding in power house following additional actions to be taken,

a. Shift Engineer to ensure that all electrical circuits are de-energized as reasonably possible without exposing any one to risk.
b. All personnel to use upper escape tunnel for escaping from the scene.
c. In case need arise, 220 KV Cable shaft can also be utilized for emergency escape.
d. Shift Engineer to ensure head count at assembly point and report to Site Incident controller.

c) Earthquake

An earthquake is a phenomenon that occurs without warning and involves violent shaking of the ground and everything over it. It results from the release of accumulated stress of the moving tectonic plates. The occurrence of an earthquake in a populated area may cause numerous casualties and injuries as well as extensive damage to property.

What to do during an Earthquake?

Stay as safe as possible during an earthquake as mentioned below. Be aware that some earthquakes are actually foreshocks and a larger earthquake might occur. Minimize your movements to a few steps that

reach a nearby safe place and stay indoors until the shaking has stopped and you are sure that exiting is safe.

If indoors

- DROP to the ground; take COVER by getting under a study table or other piece of furniture; and HOLD ON until the shaking stops.
- If there is no table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building.
- Protect yourself by staying under the lintel of an inner door, in the corner of a room, under a table or even under a bed.
- Stay away from glass, windows, outside doors and walls, and anything that could fall
- Stay inside until the shaking stops and it is safe to go outside.
- Be aware that the electricity may go out or the sprinkler systems or fire alarms may turn on.

If outdoors

- Do not move from where you are. However, move away from buildings, trees, streetlights, and utility wires.
- If you are in open space, stay there until the shaking stops.

If in a moving vehicle

- Stop as quickly as safety permits and stay in the vehicle. Avoid stopping near or under buildings, trees, overpasses, and utility wires.
- Proceed cautiously once the earthquake has stopped. Avoid roads, bridges or ramps that might have been damaged by the earthquake.

If trapped under debris

- Do not light a match.
- Do not move about or kick up dust.
- Cover your mouth with a handkerchief or clothing.

Tap on a pipe or wall so rescuers can locate you. Use a whistle if one is available. Shout only as a last resort. Shouting can cause you to inhale dangerous amounts of dust.

Rescue operations will be organized as per the damages after earthquake, either by ADHPL only or in coordination with the state machinery.

d) Outbreak of epidemic:

The nature of workforce employed in ADHPL is from multi-geographic locations across India, which at times may be susceptible to different ailments. Therefore following guidelines should be followed:

1. The ADHPL Health Department to be informed at once about any suspected cases.
2. The ADHPL Doctor (Medical Officer) shall notify ADHPL management in due time.
3. If any worker suffers from a disease which can cause epidemic, the worker shall immediately turn up for medical advice at the nearest medical center.
4. The first aider/ medical officer shall register complete address and other details of the patient and shall keep a close watch of the patient.
5. The patient shall be taken for admission or quarantined or isolated from other co-workers if and when required.
6. The Govt. Health authorities and govt. administration departments should be notified if and when required or when the circumstances force so.
7. Cleanup shall be done as per WHO guidelines.
8. Preventive vaccination of the staff should be taken up if required.

e) Bomb or Terrorist Threat:

Even though the project location is not susceptible to such dangers but keeping in mind current national and international scenario the project ERP recommends to following guidelines:

1. Inform ADHPL reception
2. Reception to follow emergency response plan.
3. Do not panic, keep calm.
4. P&A department to inform local police at Manali and SDM Manali.
5. All machineries to be switched off if possible to do so and everybody to assemble at sufficiently distant location from the suspected area.
6. Suspected area to be cordoned off by security personnel.
7. Work on site to be started after proper sterilization/sanitization by the concerned authorities.
8. In case of injuries/deaths/fire or any other damages the rescue and first aid should be started accordingly.

f) Toxic Gasses Leakage:

Toxic leakage from tunnels can also lead to emergency situation at plant site. Guidelines for actions to be taken in case of such situations are as under:

1. Evacuate all the personnel from the area immediately.
2. Inform ADHPL reception/Dispensary
3. Reception to follow emergency response plan.
4. Shift in-charge to conduct head count.
5. In case of injured remove the victim to a safer area and provide first aid, if required.
6. Arrange for transportation of injured to medical aid center.

g) Furious Behavior of Workmen:

Furious behavior of workmen out of some grievances, misleading and vested interest with the view of sabotage may also lead to Emergency situation at work sites. Such situation shall be dealt by Industrial Relation and Security Department.

1. Inform ADHPL reception/IR department

2. Reception to follow emergency response plan.
3. The security shall try to control/pacify the situation
4. Help should be called by the IR department from outside, if required
5. In case of any injuries/casualties first aid to be provided and shifted to hospital for further management.
6. Local Administration and police to be informed.

h) Chemical Spills or Releases

The chemical spills can be small or large depending upon the quantity of spill. The supervisors and shift in-charges shall be well aware of the nature of chemicals being used at site. The material safety data sheet (MSDS) is attached as *Annex –5* and is also available with the stores department.

In case of small spills that are identified and do not endanger workers in the immediate area may be cleaned up by qualified personnel who have been trained and are properly equipped to handle the situation. Supervisors should take into consideration the following:

1) The hazards of the chemical(s) involved.
2) The amount of the chemical(s) involved.
3) Spill locations.
4) Availability of spill cleanup materials or kits.

If the spill is large, if the chemical is not easily identified, if the chemical is extremely hazardous or if there has been a fire, explosion or personal injury involved, then:

1) Evacuate all personnel from the area.
2) If the entire building requires evacuation, activate ENRP and evacuate utilizing the fire evacuation procedure.

3) Report the incident to your immediate superior to activate ENRP or directly inform shift in-charge
4) Close all doors to prevent re-entry, Isolate area, establish exhaust ventilation if possible and open windows if possible without exposing yourself to the fumes.
5) While informing your superior or shift in-charge:
   - Give your name.
   - Give your location (room and building).
   - Give the phone number you are using.
   - Describe the emergency/injuries.
   - If possible, remain in vicinity, away from danger, to assist emergency responders.
6) Measures should be taken to prevent people from entering the contaminated area.
7) Meet the emergency responders and provide information and assistance as needed.

Clean Up the Spill

For chemical spills which do not involve injury, do not represent a fire or life hazard, are less than one gallon and for which you have the proper training and proper personal protective equipment to do the cleanup, you clean up the spill. If there are any questions concerning a particular spill situation, contact EHS or stores department for material safety data sheet (MSDS). If you have proper training, proper personal protective equipment and the proper materials to absorb and clean up your chemical spill, and no one has been injured, the spill is contained and the spill is not life threatening or a fire or explosion hazard, and then follows the below mentioned:

1. When cleaning up the spill yourself, locate the spill kit.
2. Choose appropriate personal protective equipment.
3. Always wear protective gloves and goggles.
4. Remove ignition sources.
5. Confine or contain the spill.

For all other chemical spill situations, including those for which you have any questions or doubts about your ability to clean up the spill, call Environmental Health and Safety (EHS). The situation will be evaluated and a proper response will follow.

i) **Disease Outbreak – Epidemic or Pandemic**

An infectious disease that has spread across a large region affecting substantial number of population in that region. The epidemics or pandemics are usually declared by the Governments of the particular region. Keeping in view the experiences from recent pandemic (COVID 19) it has been learnt that ADHPL being an essential services sector has to tackle such infectious diseases carefully and meticulously.

- The plant management and employees shall follow the guidelines being issued from time to time by the Central and State Governments.
- The employees shall follow the preventive measures being advised by the Ministry of Health GoI from time to time.
- The Plant management shall chalk out a plan for implementation of guidelines issued by various regulatory authorities.
- The Plant Management shall keep close watch on the working staff during the epidemic/pandemic situation.
- The plant Management shall make all possible arrangement for prevention of spread of disease at its premises and among its staff.
- The staff shall be trained/ given updated information about the epidemic/pandemic from time to time to keep them aware of situation.

3.7 Assembly Point

The assembly point(s) should be an area away from the building and out of the way for responding emergency personnel. Occupants should meet after evacuation so they may be accounted for or lent assistance as needed. There may be more than one assembly point depending on the size of the disaster and the location of the exits.

3.8 Rescue

Just as you are not to re-enter a burning building, do not go back in to an area where a chemical spill has occurred. In many documented cases, rescuers not wearing proper protective equipment have been overcome by toxic or asphyxiating fumes trying to rescue other victims and died as a result. Do not make this mistake. As you leave an area involved in a chemical spill, assist people exiting the area by doing the following:

1. Evacuate personnel from the spill area.
2. Direct personnel to the nearest fire exit.
3. Do not use the elevators.
4. Attend to victims.

3.9 First Aid

1. Remove victim from spill area to fresh air (but do not endanger your own life by entering areas with toxic gases).
2. Immediately remove contaminated clothing.
3. Wash skin with water.
4. Flush skin and/or eyes with water for at least 15 minutes. (You may not feel any immediate effect from a chemical spill, but it is important to wash quickly and thoroughly because many chemicals can cause severe tissue damage which is not apparent until hours later.)
5. Remove contaminated clothing while under a shower.
6. Flood wash affected body area with water for 15 minutes.
7. Get medical attention.

Detailed Notes on First Aid are attached as Annex – 6

3.10 General Rules for mobilization of an injured

1. Whenever possible, render first aid before transporting the injured. Reduce the pain and make the injured as comfortable as possible.
2. Use a regular stretcher, with minimum 04 people to carry it, so that you will not drop the injured.
3. Whenever possible, take the stretcher to the injured, instead of carrying the injured to the stretcher.
4. Fasten the injured to the stretcher so that he doesn't slip, slide, or fall off.
5. Use blankets, clothing, or other material to pad the stretcher and protect the injured from exposure to cold.
6. Injured should be lying on their back while being moved. However, in some cases, the type or location of the injury will necessitate the use of another position. In all cases, it is important to place the injured in a position that will best protect them from further injury.
7. Always move the injured persons **feet first** so the rear bearer can watch for signs of difficulty breathing on stretcher.

Accompany the injured to the hospital, and if it is not possible, always give a complete account of the situation before handing over the injured to other personnel. Include what caused the injury and what first aid procedures have been completed. Also, get the name of the injured and the person whom you are turning them over to. This is one way of protecting yourself and at the same time ensuring that the patient will be in good hands.

Details of Rescue and transportation of injured personnel are attached as *Annex – 7*

3.11 Post-Disaster Preparedness Plan

- Trigger Emergency response mechanism through the activation of the Emergency Notification and Response Plan
- Coordinate the Disaster Relief efforts upon declaration of a disaster until the crisis ends

- Notify and initiate cooperation with the District and State disaster management authorities in an event of a disaster.
- Hold emergency meeting of the Disaster Management Committee to discuss the necessary interventions.
- Carry out needs assessment, to determine the types and quantities of resources required, and advise on the required disaster relief.
- Ensure timely delivery of relief materials to the disaster afflicted.
- Closure of plant operations, if required.
- Checking and Monitoring of water conductor system for any damages/leakages, if any, after the disaster.
- Removal of old and dead trees in order to avoid road blockage during calamities.

b. Evacuation

- To warn people about the danger of impending disaster.
- To inform people to leave for safer places/shelters.
- Arrangement of vehicles/ transportation for early evacuation.
- Evacuate people of marooned areas and administer emergent relief.
- Deployment of security personnel/police, if required, for peace keeping while evacuation
- Mobilize people to go to identified/safer shelters.

c. Search & rescue

The list of volunteers included in the firefighting & rescue team of ADHPL is attached as *Annex 4* and the list of equipment required for the rescue operations are stored in the disaster management room is attached as *Annex – 8.*

- Deployment of rescue team for search, rescue and evacuation.

- Co-ordination with govt. administration department for deployment of police/fire brigade for search and rescue operations.
- Evacuation triage and transportation of the injured to the hospital.
- Pre-positioning of life saving drugs and medicines.

d. Medical Aid

- Deployment of medical personnel in the cut-off areas with medicines.
- Stock piling of required medicines/ORS packets/Chlorine tablets.
- Triage and Treatment of the wounded and arrangement for their transportation to nearby hospitals.
- Awareness messages to stop the outbreak of epidemics.
- Constitute mobile teams and visit the worst affected areas.
- Dis-infection of water sources.

e. Emergency response

- Humanitarian assistance.
- Sanitation, temporary repairs, and restoration of services.
- Damage assessment.
- Mobilization of resources.

f. Rehabilitation & Reconstruction

- Rehabilitation and reconstruction of damaged critical infrastructure.
- Revitalization of for affected sectors.
- Macroeconomic and budget management (stabilization and protection of social expenditures).
- Incorporation of disaster mitigation components in reconstruction activities.

g. Supplies and resources

There are certain planning and organizational measures that can help Project personnel and local officials to manage emergency situations more safely and effectively. These include:

- **Material Availability**

  Material needed for emergency repair may be stock piled at a nearby convenient safe place from where it can be used whenever there is emergent need for small quantum emergency jobs. For major emergency need bulk supply sources be identified beforehand and their timely supply has to be ensured.

- **Machinery, Vehicles and Equipment Availability**

  The different types of machinery required for carrying out different activities during course of reconstruction has been mentioned in attached Annexure - 9. The heavy machinery is stationed permanently at Mechanical Workshop to meet with any emergency situation. Detail of other equipment required in emergency situations is given in Annexure - 8.

3.12 Training

Training is an important aspect of emergency preparedness. To ensure readiness, ADHPL shall carry out training of all its personnel on this ENRP. Numbers of Training sessions can be determined by the EHS Head in consultation with Project In-charge.

a. Provision of Mock drill:

In order to check the effectiveness of ENRP and addressing the shortcoming, at least two major mock drills will be conducted in a year. Out of these mock drills, one will be conducted to test the internal preparedness for meeting emergency response planning and second mock drill, which will also include the participation from all the stake holders (e.g. District administration, local people and Expatriate) will cover the scope of ENRP activation of Tier 3 . The financial implication for conducting these mock drills will be covered in the annual EHS&S budget. Emergency drill will include but not be limited to,

1. Emergency response communication.

2. Dealing with emergencies including use of emergency equipment.
3. Evacuation scenario.
4. Post emergency action.
5. Drill report and follow up of recommendations.

3.13 Review, Updating, Dissemination and approval of Plan

The Emergency Notification and Response Plan (ENRP) is a living document and requires regular improvements to tackle the emergencies/ disasters in the best possible way and to lower the damages to life and materials. The document should be reviewed and updated in accordance with the guidelines of NDMC, SDMC and CWC issued from time to time and as per the set standards in procedure of ISO/OHSAS EQHSMS-001-8.2 of ADHPL.

The updated ENRP should be distributed to all departments and also a hard copy should be available with EHS&S department. The document should be accessible to all stakeholders.

Chapter 4

LIST OF ANNEXURES

Annexure No		Name
Annexure 1.	:	Organization Chart of ENRP of ADHPL
Annexure 2.	:	Emergency Telephone Numbers and Addresses
Annexure 3.	:	List of Key Personnel
Annexure 4.	:	Firefighting & Rescue Team
Annexure 5.	:	Material Safety Data Sheet
Annexure 6.	:	Notes on First Aid
Annexure 7.	:	Rescue & Transportation of Injured
Annexure 8.	:	List of Inventory of Disaster Management Room
Annexure 9.	:	List of Heavy Machinery and Vehicles
Annexure 10.	:	Inundation Map of Dam break Analysis

Distribution List: -

Copy No.	Copy Holder	Date of issue
01	Project In-charge (VP O&M)	
02	Head- HR ADMIN (VP F&A)	
03	All Department Heads	
06	HOD-EHS & S	

List of Amendments: -

S. No.	Amendment	Date
1.	Name and designation of Project In-charge updated in EAP	23.10.19
2.	Designation of Approval authority, Project In-charge, Head –F&A and other responsible persons updated and topic of epidemic/pandemic added.	22.09.21
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