Annexure - A

THDC INDIA LIMITED






RISK MANAGEMENT POLICY

FEB'2024

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-::- Foreword -::-

It is often said that those who want to play big, cannot play safe. In the present competitive business environment across the world where every organisation desires to spread its wings to remain ahead in the competition, we are prone to risks as we explore new avenues and opportunities . Time demands that we always keep our eyes and ears vigilant . Risk Management has become very important to protect the interests of the organisations as a balancing wheel. The success of any organisational effort directly depends on the strength of the person taking decisions and executing it; regulatory compliance is critical element in risk management and the person gets guided towards the right direction. Risk management has therefore become , an important ingredient of Corporate Governance and lights the path of all functional disciplines.

Sustaining any business activity requires thorough analysis of the associated risks and appropriate strategies for their mitigation. The Risk Management allows for continual improvement and greater certainty in decision making for achieving the organisational objectives in a better way.

We, at THDC India Ltd have grown over the years as one of the biggest energy providers of the country. Development of Power Projects involves various risks viz. Strategical, Financial, Operational, Legal and Regulatory Compliance, etc. which lead to increase in completion period, project cost and corresponding unit cost of power generation. The long-term success of an organization depends on the holistic approach to manage such risks.

In view of above, need for a suitable 'Risk Management Policy' was felt and accordingly a 'Risk Management Policy' has been prepared with the objective to protect the interests of all the stakeholders. The policy provides clear vision and strong basis for taking strategic decisions at all levels of the organization.

It gives me immense pleasure to release the "Risk Management Policy" of THDC India Limited.

I am sure that with the cooperation and support of all concerned, 'Risk Management Policy' would prove to be beneficial for the Corporation in all times to come. While I compliment all the officers who contributed towards the formulation of this 'Risk Management Policy' , I call upon all our employees and stakeholders to join hands in the efficient implementation of the 'Risk Management Policy' to take the corporation to greater heights.

With Best Wishes,

(Rajeev Kumar Vishnoi)
Chairman & Managing Director

1.0 DEFINITIONS

Risk :

Risks are events or conditions that may occur, and whose occurrence, if it does take place, has a harmful or negative impact on the achievement of the organization's business objectives. The exposure to the consequences of uncertainty constitutes a risk. It is expressed as a combination of the probability of an event over a given period of time and its consequence. Events with a negative impact represent risks, which can prevent value creation or erode existing value.

Risk Management :

Risk management is a set of coordinated activities to direct and control an organization with regard to risk.

Stakeholder :

Stakeholder is any person or organization that can affect, be affected by, or perceive themselves to be affected by a decision or activity.

Risk Source :

Risk source is the element which has the potential, either alone or in combination, to give rise to a risk.

Event :

Event is the occurrence or change of a particular set of circumstances.

Consequence :

Consequence is the outcome of an event affecting objectives which can be certain or uncertain.

Likelihood :

Likelihood is the probability of something happening.

Control :

Control is the measure that maintains and/or modifies risk which may not always exert the intended or assumed modifying effect.

Risk Appetite :

Risk Appetite is the broad-based amount of risk a company or other entity is willing to accept in pursuit of its business objectives and goals.

Risk Tolerance:

Risk tolerance is the acceptable deviation from the organization's risk appetite.

Risk Register :

A 'Risk Register' is a tool for recording the risks encountered at various locations and levels in a standardised format.

2.0 INTRODUCTION

About Organisation-THDCIL:

THDC India Limited is a leading Power Sector and Profit-making Public Sector Enterprise and registered as a Public Limited Company in July-1988 under the Companies Act,1956. THDCIL was conferred 'Mini Ratna' Category-I Status in Oct-2009 and up-graded to Schedule 'A' PSU in July-2010 by the Govt. of India. The Equity of Company was earlier shared between Govt. of India and GoUP in the ratio of 75:25. After Strategic Sale in March'2020, Equity in THDC India Limited is shared between NTPC Limited and Government of UP in a ratio of 74.496% and 25.504%.

Vision :

- A world class energy entity with commitment to environment and social values.

Mission of Organisation :

- To plan, develop and operate energy resources efficiently
- To adopt state-of-the-art technologies
- To achieve performance excellence by fostering a work ethos of learning and innovation
- To build sustainable a value-based relationship with stakeholders through mutual trust
- To undertake rehabilitation and resettlement of project- affected persons with human face

3.0 RISK MANAGEMENT

Risk Management is a mechanism for dealing with various aspects of associated risks in managing any business activity. It is a structured approach to managing risk resulting from all kinds of threats and involves a sequence of human activities including risk identification, risk quantification, development and implementation of risk response using managerial resources.

Risk Management involves treatment of risk, embracing both the analysis and handling of risks, using appropriate forms of risk control. Therefore, in the broadest terms, Risk Management is concerned with the planning, organizing and controlling of activities and resources in order to minimize the impact of risks.

Risk Management makes an effective contribution to the achievement of corporate objectives and constitutes an integral part of various functional management areas.

4.0 RISK MANAGEMENT POLICY

The business activities of the Company carry various internal and external risks. This document lays down the framework of Risk Management at THDCIL and defines the policy for the same.

4.1 Need for Policy

THDCIL, a leading player in the Power Sector, is exposed to number of risks in its ordinary course of business. This is inevitable, as there can be no entrepreneurial activity without the acceptance of risks and associated profit opportunities.
The Management of Risk is an integral part of good Management practice. There is a direct relationship between risk and opportunity, in all business activities and, as such, an agency needs to be able to identify measure and manage its risks and opportunity in all business activity, in order to be able to capitalize on this opportunity and achieve its goals and objectives.

The aim of the policy is not to have risk eliminated completely, but rather to ensure that every effort is made by the organization to manage risk appropriately to maximize potential opportunities and minimize the adverse effects of risk. The organization aims to use risk management to take better informed decisions and improve the probability of achieving its strategic and operational objectives.

The end result is fulfillment of the organizational objectives in better way.

4.2 Policy Statement

The policy statement is as given below:

- To ensure protection of shareholder value through the establishment of an integrated Risk Management Framework for identifying, assessing, mitigating, monitoring, evaluating and reporting of all risks.

- To provide clear and strong basis for informed decision making at all levels of the organization.

- To continually strive towards strengthening the Risk Management System through continuous learning and improvement and to achieve the objectives of this policy through proper implementation and monitoring.

- To ensure that new emerging risks are identified and managed effectively.

- To put in place systems for effective implementation for achievement of policy objectives through systematic monitoring and effecting course corrections from time to time.

4.3 Objectives of Policy

The main objective of this policy is to ensure business continuity and sustainable business growth with stability and to promote a pro-active approach in identifying, evaluating, reporting and managing risks associated with the business. In order to achieve the key objectives, the policy establishes a structured and disciplined approach to Risk Management, including the development of the Risk Register, in order to guide decisions on risk related issues. The specific objectives of the Risk Management Policy are:

- Safeguarding the interest of shareholders and other stakeholders through professional management of risks.
- To ensure that all the current and future material risk exposures of the company are identified, assessed, quantified, appropriately mitigated and managed.
- To establish a framework for the company's risk management process and to ensure companywide implementation.
- To ensure systematic and uniform assessment of risks related with construction projects and operational power stations.
- To enable compliance with appropriate regulations, wherever applicable, through the adoption of best practices.
- To assure business growth with financial stability.
- Improving decision making, planning and prioritization by comprehensive and structured

understanding of business activities, volatility and opportunities/ threats.

- Developing responses to either prevent such events from occurring or manage and minimize the impact of such event, if it does occur;
- Identifying any unmitigated risks and formulating action plans for addressing such risks ;
- Periodical monitoring and review of the Risk Management system to ensure the adequacy of Risk Management (System).

4.4 Scope and Applicability

The policy guidelines are devised in the context of the future growth objectives, business profile envisaged and new business endeavors including new products and services that may be necessary to achieve these goals and the emerging global standards and best practices amongst comparable organizations.

This policy is meant to ensure continuity of business and protection of interests of the investors and thus covers all the activities within the company and events outside the company which have a bearing on the company's business. The policy shall operate in conjunction with other business and operating/ administrative policies.

THDCIL's Risk Management Policy shall also be applicable to its all subsidiaries / JVs.

4.5 Principles of Risk Management

In order to fulfill the objectives of this policy and lay a strong foundation for the development of an integrated risk management framework, the policy outlines the following guiding principles of Risk Management:

- All business decisions will be made with the prior information and acceptance of risk involved.
- The Risk Management Policy shall provide for the enhancement and protection of business value from uncertainties and consequent losses.
- All employees of the company shall be made aware of risks in their respective domains and their mitigation measures.
- The risk mitigation measures adopted by the company shall be effective in the long-term and to the extent possible be embedded in the business processes of the company.
- Risk tolerance levels will be regularly reviewed and decided depending upon the change in company's strategy.
- The occurrence, progress and status of all risks will be promptly reported and appropriate actions be taken thereof.

4.6 Business Continuity Plan

THDCIL is already having Emergency Action Plan (EAP) to deal with any emergency situation, Crisis Management Plan (CMP) to deal with any type of crisis situation at Operational Plants and Cyber Crisis Management Plan (CCMP) to deal with situation of cyber crisis. All these plans shall be reviewed time to time for any updation /modification.

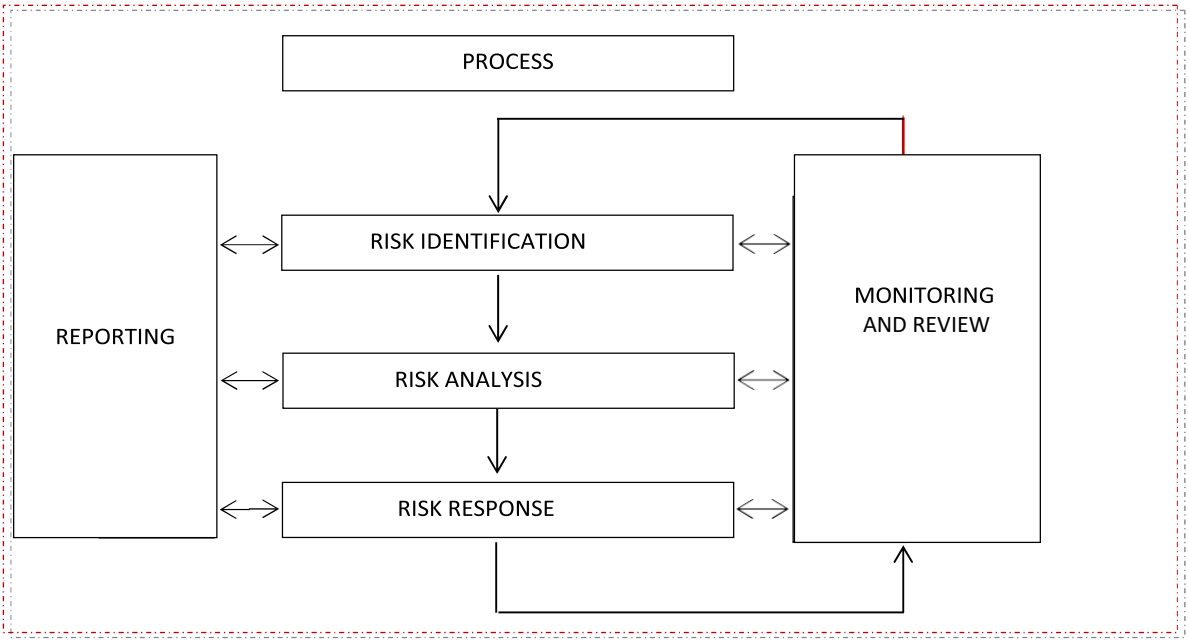
5.0 RISK MANAGEMENT APPROACH

Risk Management is the process which shall enable the organization to identify, analyse and treat risks. It is the responsibility of everyone in the organization viz. Board, Management Team and all THDCIL personnel. Risk Management applies to all functions, departments and operations within the organization.

The primary objective(s) of establishing a Risk Management Process is to ensure that:

- Risks faced by the organization shall be identified and collected in a central repository, enabling the top management to take a comprehensive view of the same
- Risks identified shall be analysed, mitigated, monitored and reviewed on an ongoing basis.

The Risk Management Process is depicted below:



5.1 Risk identification

Risk identification sets out to identify an organization's exposure to uncertainty. This requires an in-depth knowledge of the organization, the market in which it operates, the economic, legal, regulatory, social, political, technological and cultural environment in which it exists, as well as the development of a sound understanding of its strategic and operational objectives, including factors critical to its success and the threats and opportunities related to the achievement of these objectives.

Risk identification shall be approached in a methodical way to ensure that all significant activities within the organization are identified and all the risks flowing from these activities are defined.

The following methodologies can be used to identify risks:

- Brainstorming
- Surveys/Interviews/Working groups
- Experiential or Documented Knowledge
- Risk Lists-Lessons Learned
- Historical risk event information

For regular/planned risk identification, risk-oriented surveys/interviews at all projects on half yearly basis shall be conducted by 'Risk Reporter' which may help in identifying those risks not identified during normal planning activities. Interviews/interactions during preparation of pre-feasibility reports (PFRs) and Detailed Project Reports(DPRs) shall also be conducted.

The following factors should be considered while identifying the risk:

- Tangible and Intangible sources of risk
- Causes and Events
- Threats and Opportunities
- Vulnerabilities and Capabilities
- Interested parties and their expectations
- Changes in the External and Internal context/Issues
- Indicators of emerging risks
- The nature and value of assets and resources
- Consequences and their impact on objectives
- Limitations of knowledge and reliability of information
- Time-related factors

5.2 Risk categorization

All the risks that are identified shall be classified under the following risk categories:

❖ **Strategic Risk :**

Risk of loss resulting from business factors. These risks adversely affect the achievement of strategic objectives and may impair overall enterprise value.

Types of Strategic Risks:

- Demand Shortfall
- Customer retention and New Customer
- Integration problems
- Pricing pressure
- Regulation
- R & D
- Industry or sector downturn
- JV or partner losses

❖ **Financial Risk :**

Risk directly impacting the balance sheet and access to capital.

Types of Financial Risks:

- Debt and high interest rates
- Foreign Currency Risk
- Repayment capacity risk
- Non-paying customer
- Poor Financial management
- Asset losses
- Goodwill and amortization
- Accounting problems

❖ **Operational Risk :**

Risk of loss resulting from inadequate or failed processes, people and information systems.

Types of Operational Risks:

- Time & Cost Overrun
- Operational Controls
- Poor Capacity management
- Supply Chain Issues
- Employee Issues

❖ **Compliance Risk :**

Risk of loss resulting from legal and regulatory factors, such as strict privacy legislation, compliance laws, and intellectual property enforcement.

Types of Compliance Risks:

- Labour laws
- Legal Issues
- Company laws
- Changes in Regulation

❖ **Cybersecurity Risk :**

Risks directly impacting the confidentiality, integrity and availability of assets including data. All such risks shall be managed in line with THDCIL's 'Cyber Crisis Management Plan' (CCMP).

❖ **Environment, Social and Governance (ESG) Risk :**

ESG risks refer to the potential negative impacts that environmental, social, and governance factors can have on a business or investment. These risks are important considerations for companies and investors as they can affect long-term sustainability, reputation, and financial performance.

Types of ESG Risks:

✓ **Environmental:**

- Carbon footprint
- Water usage
- Waste disposal
- Impact on biodiversity
- Deforestation

✓ **Social:**

- Wage equality
- Workplace safety conditions
- Supplier/vendor practices
- Human rights violations
- Diversity, equity, and inclusion
- Data privacy

✓ **Governance :**

- Transparent communications
- ESG disclosures
- Board structure and diversity
- Corruption and fraud prevention
- Organization integrity and ethics

- Employees satisfaction

From the tracking point of view, risks have further been classified w.r.t sector specific:

Hydro : These risks deal with hydro projects/plant specific risks. For example - R&R, land acquisition, land slide, flooding, geological surprises, environmental & forest clearances, poor financial health of the civil contractors of hydro sector, social and community opposition etc.

Thermal : These risks deal with thermal projects specific risks. For example - fuel price volatility, fuel procurement, environmental regulations, climate change and resource scarcity, technology risk, supply chain risk, social and community opposition etc.

Renewable : These risks deal with renewable projects specific risks. For example - implementation of JVs for renewable projects, grid integration challenges, technological risk, policy and regulatory uncertainty, weather-related risk, large scale land acquisition etc.

Others : These risks deal with Corporate related risks. For example - human capital risk, reputational risk, market risk, credit risk, business model risk, competitive landscape, litigation risk, talent management, economic downturns, geopolitical risks etc.

5.3 Risk Analysis

Risk analysis allows an entity to consider the extent to which potential events have an impact on achievement of objectives. The purpose of risk analysis is to comprehend the nature of risk and its characteristics including, where appropriate, the level of risk. Risk analysis involves a detailed consideration of uncertainties, risk sources, consequences, likelihood, events, scenarios, controls and their effectiveness.

Risk analysis should consider factors such as:

- The likelihood of events and consequences
- The nature and magnitude of consequences
- Complexity and connectivity
- Time-related factors and volatility
- The effectiveness of existing controls

The risks identified shall be analysed, in consideration of above factors, by their impact parameters and their likelihood as per the following methodology:

5.3.1 Estimate impact of Risk

Process of 'Impact of Risk' quantification for the company has to be qualitative, supported by quantitative impact analysis. To apply this approach, the chain of adverse consequences, which may occur in case the identified risk materializes, shall be enlisted. For each of the chains of adverse consequences, the cost impact needs to be calculated and attributed to the particular risk. In such an exercise, actual cost impacts (like claims by contractor, loss of equipment value, etc.) as well as opportunity costs (like loss in realization of revenue, delay in commission of project etc.) must be captured to arrive at the total cost impact of materialization of the risk. This is based on OHSAS, QMS guidelines as well as industry standards.

In case, the rating based on different parameters are different, higher of the two or more ratings shall be considered as the final risk rating.

E.g. For a particular risk, Impact rating is 3 based on the Financial parameter and 2 based on the Operations parameter, the final impact rating shall be taken to be as 3.

Impact Rating: Determination of impact due to risk occurrence				
Risk Category	Impact Parameters	Measurement Reference		
		Low (Rating1)	Medium (Rating2)	High (Rating 3)
Strategic	Impact on key strategies for organization such as customers, employees and vendors	Minimal impact- (Cost of impact is likely to be less than 0.1% of Profit Before Tax-PBT)	Moderate impact- (Cost of impact is likely to be between 0.1% to 1% of PBT)	Significant impact- (Cost of impact is likely to exceed 1% of PBT)
Financial	Impact on key company financials such as operating revenue	Insignificant impact on company financials – (Cost of impact is likely to be less than 0.1% of Profit Before Tax-PBT)	Moderate impact on company financials – (Cost of impact is likely to be between 0.1% to 1% of PBT)	Significant impact on company financials - (Cost of impact is likely to exceed 1% of PBT)
Operational	Impact on service availability or productivity/operations	Minimal impact on operations- (Cost of impact is likely to be less than 0.1% of Profit Before Tax-PBT)	Moderate impact on operations- (Cost of impact is likely to be between 0.1% to 1% of PBT)	Significant impact on operations- (Cost of impact is likely to exceed 1% of PBT)
Compliance	Legal and Regulatory breach and its consequences due to non-compliance to legal and regulatory requirements	Minimal or No Impact	Moderate compliance failures detected, limited penalties	Significant compliance failures detected, show cause notice or Significant penalties
Cybersecurity Risk	Breach of confidentiality, integrity and availability of assets including data	Minimal impact- (Cost of impact is likely to be less than 0.1% of Profit Before Tax-PBT)	Moderate impact- (Cost of impact is likely to be between 0.1% to 1% of PBT)	Significant impact- (Cost of impact is likely to exceed 1% of PBT)
Environment, Social and Governance (ESG) Risk	Impact on environmental, social, and governance factors	Minimal or No Impact on ESG	Moderate impact on ESG	Significant impact on ESG

5.3.2 Estimate Likelihood of occurrence

Process of likelihood of risk quantification for the company has to be qualitative based on stakeholder discussions and supported by the data on the occurrence of similar risk events in the past. To assess the likelihood, the following classification matrix shall be considered as below:

Likelihood Rating : **Determination of risk occurrence**		
Risk Measurement Score (Likelihood)	Classification	Supplementing information to determine the score of Likelihood
1	Low	Rare occurrence based on history
2	Medium	Annual occurrence
3	High	More than once in a year

Risk Rating is the result of the product of impact and likelihood of occurrence of a risk with the consideration of controls in place.

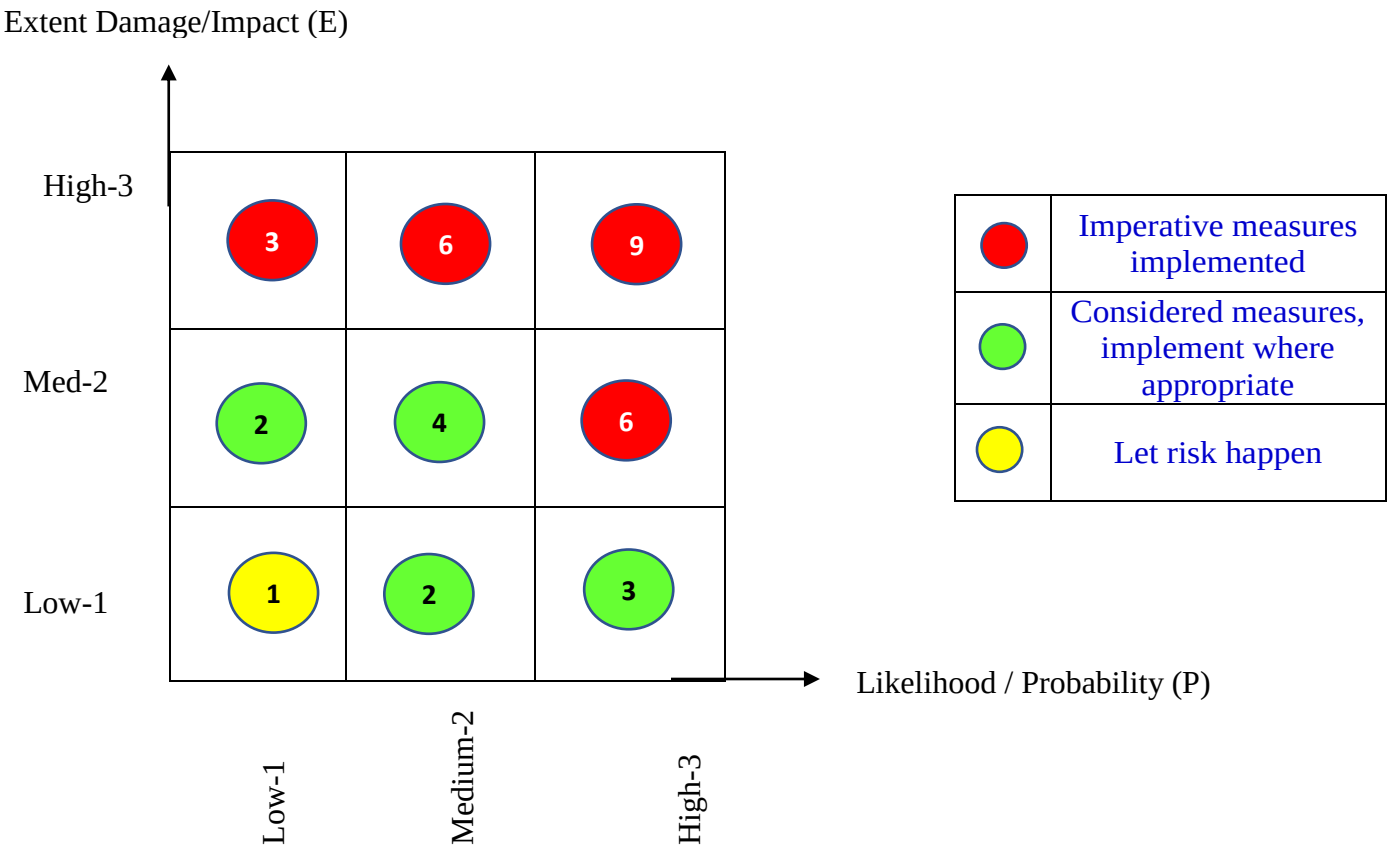
5.3.3 Risk Exposure

The risk assessment methodology adopted defines risk exposure as a product of Impact (rating) of the risk and the Likelihood of occurrence (rating) of the risk.

The ratings of risk exposure are as follows :

Impact (I)	X	Likelihood (L)	=	Risk Exposure
(Rating from 1 to 3)		(Rating from 1 to 3)		(Rating from 1 to 9)

The strategy of action for risk management shall be based on the following principles, which are visualized in the figure given below:



i. If threats reach a risk value of >= 6, it is **High Priority Risk** and imperative measures shall be taken.

ii. For all the threats with a low probability/likelihood of occurrence, but high extent of damage/Impact (L=1; I=3) having a risk exposure rating of 3, **High Priority Risk** and imperative measures shall be taken.

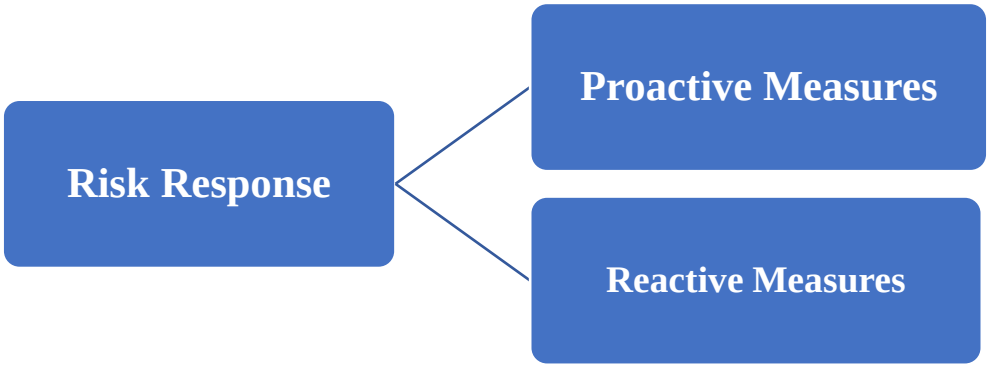
iii. Threats with a risk exposure rating of 1 are **low Priority Risks** and do not require any planning of measures.

iv. In all other cases falling in **Medium Priority Risks** considered measures shall be implemented appropriately.

6.0 RISK RESPONSE

Risk response is a component of the risk management and it refers to the actions and strategies that an organization adopts to address and manage potential risks. The overall

goal of risk response is to minimize the impact of potential threats and maximize the opportunities for achieving objectives.
Risk response encompasses actions taken both before and after a risk event. It includes pre-planned strategies as well as reactive measures in response to an actual risk occurrence.



There are several common strategies under measures of the risk response, which can be categorized into four main types:

- **Risk Avoidance / Termination:**
  By not performing an activity that could carry risk. Avoidance may seem the answer to all risks, but avoiding risks also means losing out on the potential gain that accepting (retaining) the risk may have allowed.

- **Risk Mitigation:**
  Mitigation aims to reduce the probability or impact of a risk. This strategy involves implementing preventive measures or putting contingency plans in place to minimize the negative consequences if the risk does occur. For instance, application of shotcrete is a mitigation strategy for preventing occurrence of landslide.

  The purpose of reducing a risk is to continue with the activity which gives rise to the risk but to bring the risk to an acceptable level by taking action to control it in some way through either:
  - **Containment actions** (lessen the likelihood or consequences and applied before the risk materializes),or ;
  - **Contingent actions** (put into action after the risk has happened, i.e. reducing the impact. Must be pre-planned)

- **Risk Acceptance / Retention:**
  Accepting the loss when it occurs. Risk retention is a viable strategy for small risks where the cost of insuring against the risk would be greater over time than the total losses sustained. All risks that are not avoided or transferred are retained by default.
  This includes risks that are so large or catastrophic that they either cannot be insured against or the premiums would be infeasible.

- **Risk Transfer :**
  Mitigation by having another party to accept the risk, either partial or total, typically by contract or by hedging.
  This option is particularly good for mitigating financial risks or risks to assets. Insurance can be used as one of the instruments for transferring risk.

6.1 Risk Reduction/Mitigation Process

Risk mitigation process is identifying, assessing, and taking steps to reduce or eliminate

the impact of potential risks on a project, organization, or system. The risk mitigation process typically involves several key steps:

Risk Mitigation Process:

Identify controls :

New control activities are designed in addition to existing controls post assessment of risk exposure at current level to ensure that the risks are within the accepted risk appetite.

Control activities are categorized into Preventive or Detective on the basis of their nature and timing:

- **Preventive controls** – focus on preventing an error or irregularity.
- **Detective controls** – focus on identifying when an error or irregularity has occurred. It also focuses on recovering from, repairing the damage from, or minimizing the cost of an error or irregularity.

Evaluate Controls :

The controls identified for each risk event shall be evaluated to assess their effectiveness in mitigating the risks falling beyond the risk appetite.

Implement Controls :

It is the responsibility of the Risk Reporter and Risk Owner to ensure that the risk mitigation plan at respective Function/Project/Plant/Unit/JV is in place and is reviewed regularly.

6.2 Key Implementation Areas for Risk Mitigation

The following are the key areas where risk mitigation measures need to be implemented:

➢ *Strengthening of Internal Processes :*

- **Strengthening, Process Benchmarking and Re-engineering for key Business Processes:**
  Two key business processes to be focused on–
  - Survey and Assessment Process
  - Contract Management Process

  The company needs to strengthen these processes through detailed analysis and should conduct a bench marking exercise for its key business processes. The complete processes should be studied and analyzed to make the system more robust and free from any error which may be potential causes of risks. The exercise should also aim to derive standards for each activity and if required rearrange processes to plug loop holes which may be causes of potential risks

- **Knowledge Management System**:
  KMS should be built to capture the learning of the organization. The KMS will provide benefits for future projects in terms of handling similar risks in other projects, providing better estimates of time and cost for specific activities, estimating occurrence of uncertain events and in capturing the tacit knowledge and experience of the company's human resource.

- **Outcome-linked PMS**:
  It is very important that the company links performance targets of individuals and functions/departments with the expected outcomes so as to bring in more

responsibility, accountability and drive into the personnel engaged in critical activities. Implementation of an outcome-linked PMS along with process bench marking would clearly bring out the areas due to which performance of the projects and organization is slipping.

- **Integrated Project Monitoring System**:
  A seamless integrated Project Monitoring System is required for quick response and prompt decision making as well as to bring to attention the areas of short-fall and for tracking delays.

- **Cybersecurity :**
  Cybersecurity is the practice of protecting systems, networks, and programs from digital attacks.
  To ensure the robust protection of power generation systems against cyber threats, the implementation of comprehensive cyber security measures is imperative. Regular audits and updates of cyber security protocols must be conducted to identify and address potential vulnerabilities promptly. In addition, employee training programs should be established to enhance cyber security awareness among personnel, fostering a proactive and vigilant workforce. This multi-faceted approach aims to fortify the security posture of power generation systems, mitigating the risks associated with cyber threats and ensuring the reliability and resilience of critical infrastructure.

- **Technology and Equipment Reliability:**
  To maintain and enhance the performance of power generation equipment, a holistic strategy involves regular maintenance, timely upgrades, and the implementation of advanced condition monitoring and predictive maintenance technologies. Furthermore, ensuring the quality of new equipment installations through rigorous testing and quality assurance protocols is essential. This comprehensive approach contributes to increased operational reliability, prolonged equipment lifespan, and the development of a more sustainable and resilient energy infrastructure.

- **Environmental and Social Impact Assessment:**
  To ensure responsible power generation projects, it is essential to conduct thorough assessments of both environmental and social impacts. The implementation of sustainable and environmentally friendly technologies is crucial for minimizing ecological footprints. Concurrently, active community engagement and social responsibility programs must be established to address local concerns and foster a sense of shared responsibility. By integrating these elements, projects can achieve a balance between meeting energy demands, preserving the environment, and addressing the unique concerns of local communities.

- **Capacity Building and Training:**
  The Company needs to implement training programs to develop a skilled workforce proficient in risk management and mitigation strategies. Emphasizing a culture of safety and risk awareness, these initiatives aim to equip staff with the knowledge to identify, assess, and proactively address emerging risks. The training should cover a range of topics, fostering resilience and a collective intelligence within the organization. This approach ensures that the workforce remains vigilant and capable of navigating challenges, contributing to the overall adaptability and resilience of the organization.

➢ *Liaison with Governments and Regulatory Authorities :*

- **Relationship Management with State Govt.:**
  The relationship with key State Govt. officials in all relevant Deptts. be established pro-actively.

- **Relationship Management with MoP/Ministry of Water Resources, MoEF, CEA, CWC, CERC, GSI, etc. :**
  To be in constant touch with the CERC to understand pro-actively the direction of policy reforms and take initiative to bring out favorable policies and should also interact pro-actively with the MoP/Ministry of Water Resources, MoEF, CEA, CWC, CERC, GSI etc. to build strong relationship and favorable image of the company.

➢ *Contract Management :*

- **Comprehensive Contracting Strategy**:

  A comprehensive contracting strategy refers to a strategic approach that encompasses various aspects of contracting within a business or project. This strategy is designed to ensure that the contracting process is thorough, well-planned, and aligned with the overall goals and objectives of the organization. It involves considering multiple factors, including legal, financial, operational, and risk management aspects, to create a holistic and effective contracting framework.

  Key components of a comprehensive contracting strategy may include:

  Legal Compliance: Ensuring that all contracts adhere to applicable laws and regulations is crucial. This involves understanding and incorporating legal requirements into the contracting process to mitigate legal risks.

  Financial Considerations: Analyzing the financial implications of contracts, including cost structures, payment terms, and performance metrics, is vital. A comprehensive strategy considers the financial impact of contracts on the overall budget and financial health of the organization.

  Contract Lifecycle Management: Managing contracts throughout their lifecycle involves planning, negotiation, execution, monitoring, and renewal or termination. A comprehensive strategy ensures that each stage of the contract lifecycle is well-defined and efficiently managed.

  Supplier Relationship Management (SRM): For many organizations, effective contracting involves not only obtaining goods or services but also managing relationships with suppliers. A comprehensive strategy may include elements of SRM to foster positive and collaborative partnerships with suppliers.

  Technology Integration: Leveraging technology, such as contract management software, can enhance the efficiency and transparency of the contracting process. Integrating technology solutions into the strategy can streamline workflows, improve communication, and facilitate data management.

  Performance Metrics and Evaluation: Establishing key performance indicators (KPIs) and metrics to evaluate the success of contracts and the overall contracting strategy. Regularly reviewing and adapting the strategy based on performance data ensures continuous improvement.

  By addressing these various components, a comprehensive contracting strategy aims to optimize the entire contracting process, from initial negotiations to contract

fulfillment. This approach helps organizations minimize risks, achieve cost savings, improve operational efficiency, and build strong, mutually beneficial relationships with suppliers and partners.

The company needs to draw out a clear Contracting Policy to outline guidelines addressing key contract management issues including penalties related with timely completion of contracted work, handling of unforeseen uncertainties, criteria for allowing contractors to bid, etc. This policy should device preventive measures to avoid all contractor related issues.

- **Dispute Avoidance Mechanism**:
  A dispute avoidance mechanism for early and prompt settlement of contractor's issues needs to be operationalised for all projects in line with the Govt. guidelines issued from time to time.

- **Dispute Resolution Cell (DRC) :**
  For dealing with activities related to resolution of Contractual Disputes and Arbitration cases, a Dispute Resolution Cell (DRC) shall be constituted. Main objective of DRC shall be to resolve disputes avoiding arbitration.
  Detailed structure, roles & responsibilities, modalities of DRC shall be framed separately.

➢ ***Pro-active CSR Activities :***

- **Allocation of budget for other than Project-related CSR activities:**
  The company needs to budget for a separate fund for proactive CSR activities in key States of importance. The activities have to be focused on building a healthy brand image of the company with the Govt. and the inhabitants of the State.

By addressing these key implementation areas, organization can enhance their ability to identify, assess, and mitigate risks effectively, contributing to the overall success and resilience of their projects or business operations.

6.3 Standard Operating Procedures (SoPs)

Standard Operating Procedures (SoPs) for all those activities/process carries significant risk shall be created by Risk Reporters taking in to consideration of the historical data of the company.

7.0 RISK GOVERNANCE

7.1 Risk Governance Structure

A well-defined 'Risk Governance Structure' serves to communicate the approach of risk management throughout the organization by establishing clear allocation of roles and responsibilities for the management of risks on a day to day basis.

Risk Governance Structure shall be as under :

- Risk Management Committee (RMC) – comprising of 'Board' Members
- Chief Risk Officer (CRO)-Appointed by 'Risk Management Committee'
- Risk Owners- Head of Function at Corp Level/Other Locations/JV
- Risk Reporters-Head of Project/Plant/Unit/JV
- Nodal Officers-Head of respective Planning Deptt.

(If Planning Deptt. does not exist in a project/plant/unit/JV etc., Head of the respective project/plant/ unit/JV etc., shall appoint the Nodal Officer)

➢ **Risk Management Committee already constituted, comprise of :**

- Director (Finance), THDCIL – Member
- Director (Technical), THDCIL – Member
- Independent Director - Member

7.2 Role and Responsibilities

➢ **Roles and Responsibilities of the 'Nodal Officers' :**

'Nodal Officers' shall collect all risk related detail/data from all deptts. of their respective Project/ Plant/unit/JV and after compilation in prescribed format shall submit the same to the Risk Reporter on quarterly basis or as and when required, whichever is earlier.

➢ **Role and Responsibilities of the 'Risk Reporters':**

The 'Risk Reporters' shall identify the anticipated key risks for the organization related to their Project/Plant/unit/JV and shall suggest mitigation measure and implementation plan against each identified risk. Accordingly, Risk Reporter shall submit the report (Risks and Mitigation Plan) to the concerned 'Risk Owner' on quarterly basis or as and when required, whichever is earlier.
'Risk Reporter' shall also be responsible for implementation and monitoring of Risk Mitigation Measures for its effectiveness.

➢ **Role and Responsibilities of the 'Risk Owners':**

The 'Risk Owners' shall be responsible for monitoring and supervising the implementation of the 'Risk Management Plan' and maintain enterprise wide view of the key risks anticipated by the organization.

- Risk Owner shall analyze the reported risks & their mitigation plan and finalize & approve the same after appropriate modifications, if required.
- Risk Owner shall map the risks reported according to their ratings on a regular basis.
- Risk Owner shall ensure that effective risk mitigation plans are in place and the results are evaluated and acted upon.
- Risk Owner shall forward the approved risks and their mitigation plans to 'Chief Risk Officer' (CRO) on quarterly basis or as and when required, whichever is earlier.
- 'Risk Owner' shall also act as 'Risk Reporter' for the areas/issues which are not covered or beyond purview of 'Risk Reporter' of their Project/Plant/Unit/JV.

➢ **Roles and Responsibilities of 'Chief Risk Officer' (CRO):**

The Chief Risk Officer (CRO) shall be appointed to co-ordinate with the heads of Project/plant/unit/JV and 'Risk Owners' in establishing and implementing the risk management process effectively.

- CRO shall submit the approved risks & their mitigation plan (as provided by respective 'Risk Owners'), along with comments/suggestions, if required, to Risk Management Committee.

- Communicating and managing the establishment and ongoing maintenance of 'Risk Management Policy' pursuant to the organization's risk management vision.
- Designing and reviewing processes for risk management.
- Communicating with the Risk Management Committee regarding the status of risk management and reporting the key risks faced by the organization.
- Facilitating discussions among the Risk Owners and Risk Reporters.
- Ensuring that the 'Risk Management Policy' is implemented at each Project/Plant/Unit/JV and all significant risks are being recognized and effectively managed in a timely manner and conduct re-assessment of the same, if required.
- Risks identified shall be widely circulated within the organization.

➢ **Role and Responsibilities of the 'Risk Management Committee':**

The key role of the Risk Management Committee is to align the strategic objectives with the organization's operations in order to achieve intended outcomes which shall, inter-alia, include the following :

- To formulate a detailed Risk Management Policy which shall include:
  (a) A framework for identification of internal and external risks including financial, operational, sectoral, sustainability (particularly Environmental, Social & Governance-ESG related risks), information, cyber security risks or any other risk as may be determined by the Committee.
  (b) Measures for risk mitigation including systems and processes for internal control of identified risks.
- To ensure that appropriate methodology, processes and systems are in place to monitor and evaluate risks associated with the business of the Company.
- To monitor and oversee implementation of the risk management policy, including evaluating the adequacy of risk management systems.
- To periodically review the risk management policy, at least once in two years, including by considering the changing industry dynamics and evolving complexity.
- To keep the board of directors informed about the nature and content of its discussions, recommendations and actions to be taken.
- The Risk Management Committee shall apprise the Board on the key risks anticipated/faced by the organization and the mitigation measures taken.
- The Risk Management Committee shall also apprise the Board for decision on any new/emerging risks faced by the organization in case of exigencies/emergent conditions.
- The Risk Management Committee shall present the relevant findings to the THDCIL's Board of Directors for approvals/actions.
- The appointment, removal and terms of remuneration of the Chief Risk Officer (if any) shall be subject to review by the Risk management Committee.

The Risk Management Committee shall coordinate its activities with other committees, in instances where there is any overlap with activities of such committees, as per the framework laid down by the Board of Directors.

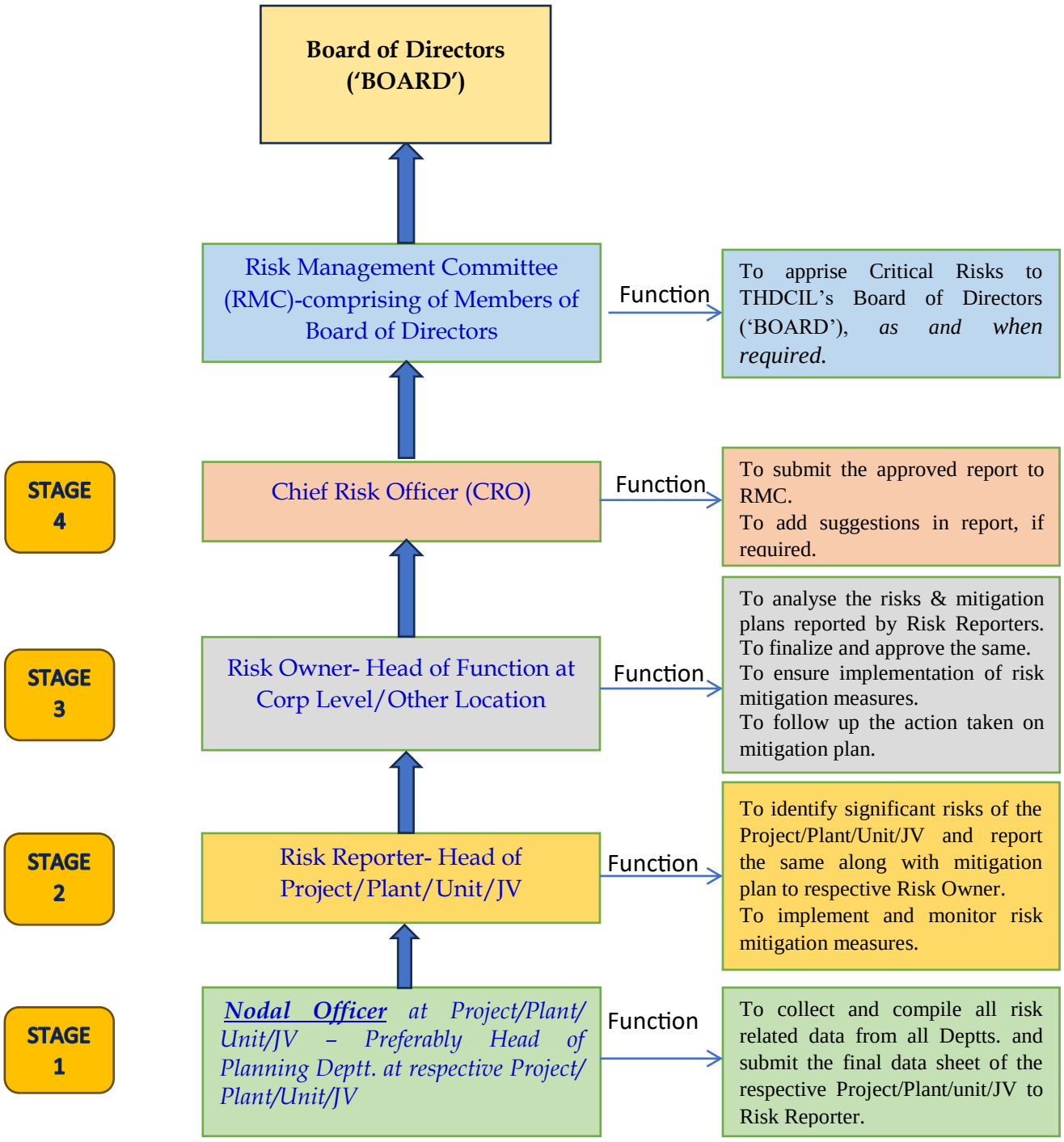
Risk Management Committee shall meet at least twice in a year. The meetings

of the Risk Management Committee shall be conducted in such a manner that on a continuous basis not more than 180 days shall elapse between any two consecutive meetings.

Risk Management Committee shall have powers to seek information from any employee, obtain outside legal or other professional advice and secure attendance of outsiders with relevant expertise, if it considers necessary.

7.3 Risk Reporting Structure

The following risk reporting structure shall be followed by the organization :



NOTE :

1. *All 'Risk Owners' shall also act as 'Risk Reporter' for the areas/issues which are not covered or beyond purview of 'Risk Reporter' of Project/Plant/Unit/JV.*
2. *Nodal Officer shall Preferably be head of Planning deptt. (If Planning Deptt. does not exist in a project/plant/unit/JV etc., Head of the respective project/plant/unit/JV etc., shall appoint the Nodal Officer.)*

8.0 RISK MONITORING AND REVIEW

The purpose of monitoring and review is to assure and improve the quality and effectiveness of process design, implementation and outcomes. Ongoing monitoring and periodic review of the risk management process and its outcomes should be a planned part of the risk management process.

Monitoring and review should take place in all stages of the process. Monitoring and review includes planning, gathering and analysing information, recording results and providing feedback.

It involves the continuous tracking and surveillance of identified risks throughout the project or organizational process. The primary purpose is to ensure that the risk responses are effective, and any new risks are identified and addressed promptly.

As the risk exposure of any business may undergo change from time to time due to continuously changing environment, the risks with their mitigation measures shall be monitored and reviewed on a regular basis.

Quarterly (or as and when required, but not later than):

- The Risk Reporter and Risk Owner shall review the status of risks and effectiveness of their mitigation plans.
- Any new or changed risks shall be identified and escalated, if deemed necessary, to the Chief Risk Officer (CRO).

Bi-Annually (or as and when required, but not later than):

- The CRO shall apprise the Risk Management Committee with the key identified risks, their mitigation plan and action taken on bi-annual basis.
- The Risk Management Committee shall monitor and supervise the implementation of the Risk Management Policy and maintain enterprise wide view of the key risks and their mitigation measures faced by the organization.

Annually (or as and when required but not later than):

- The Risk Management Committee shall apprise the Board, at least once annually, on the key risks faced by the organization, the mitigation measures taken and relevant findings for approval/actions.

Any monitoring and review process shall also determine whether:

- The measures adopted resulted in what was intended.
- The procedures adopted and information gathered for undertaking the assessment was appropriate.
- Proposed actions to eliminate, reduce or manage each material risk have been considered and agreed.
- Responsibilities for the mitigation measures for risk management of each risk have been appropriately assigned.
- Any of following trigger points has activated :

S.N	Category of Risk	Trigger Point
1	Strategic	**Market Changes:** • Rapid shifts in customer preferences. • Emerging technologies disrupting existing markets. • Changes in competitive landscape. **Internal Changes:** • Leadership changes. • Organizational restructuring. **Global Events:** • Political instability in key markets. • Pandemics and global health crises. **Strategic Partnerships:** • Breakdowns in key partnerships. • Changes in alliances or collaborations. **Customer Behavior:** • Significant changes in customer expectations. • Loss of a major customer. **Emerging Risks:** • Identification of new risks not previously considered. • Changes in geopolitical dynamics.
2	Financial	**Economic Factors:** • Economic downturns affecting consumer spending. • Currency fluctuations impacting international operations. **Financial Factors:** • Cash flow problems. • High levels of debt. **Interest Rate Fluctuations:** • Changes in interest rates impacting borrowing costs or investment returns. **Liquidity Issues:** • Inability to meet short-term obligations due to a lack of liquid assets. **Debt Levels:** • Excessive levels of debt relative to equity, increasing financial leverage.
3	Operational	**Technology Disruptions:** • Failure or obsolescence of critical technologies. **Supply Chain Disruptions:** • Natural disasters affecting suppliers. • Geopolitical events impacting the supply chain.

		Operational Failures: • System failures or operational breakdowns. • Supply chain disruptions affecting production.
4	Compliance	**Regulatory Environment:** • Introduction of new regulations affecting the industry. • Changes in government policies impacting the business. **Legal Issues:** • Lawsuits or legal challenges. • Changes in legal frameworks affecting the industry.
5	Cybersecurity	**Cybersecurity Threats:** • Cyberattacks compromising financial data or disrupting operations. **Legacy Systems and Aging Infrastructure:** • Many power facilities still use legacy systems that may have vulnerabilities and are not designed with modern cybersecurity in mind. • Aging infrastructure may lack the latest security features and updates, making it more susceptible to cyber threats.
6	ESG	**Environmental Factors:** • Natural disasters impacting operations. • Increasing emphasis on sustainable practices. **Reputation Risks:** • Negative publicity or social media backlash. • Product recalls or quality issues.

9.0 RISK RECORDING AND REPORTING

The risk management process and its outcomes should be recorded and reported through appropriate mechanisms.

Recording and reporting in risk management serve to communicate activities and outcomes across the organization, providing essential information for decision-making. The process contributes to the continuous improvement of risk management activities by analyzing data and identifying areas for enhancement. Additionally, it facilitates interaction with stakeholders, fostering collaboration and shared responsibility for managing specific risks. Overall, the systematic documentation supports organizational resilience and adaptability in navigating uncertainties.

9.1 Reporting format:

- Centralized ‘Risk Register’ with their mitigation plan and its status shall be maintained
- Manual reporting would be undertaken by each business unit which will be upgraded to tool based reporting post risk management implementation.

Risk Register

Name of Project/Power Station/Unit/Deptt. :									
Location:									
Name and Designation of Risk Reporter :									
S.N	**Risk Description**	**Risk Category**	**Impact**	**Likelihood**	**Risk Rating (I X L)**	**Risk Response**	**Risk Mitigation Measure**	**Responsibility**	**Status**
1		Strategic Financial Operational Compliance Cybersecurity ESG	Low Medium High	Low Medium High	Low Medium High	Avoidance Mitigation Acceptance Transfer		Names of concerned Risk Owner and Risk Reporter	
1	Land slide during construction stage	Operational	High	High	High	Mitigation	- Land slide zone mapping of the project -Ensure detailed surveys / studies are carried out by competent personnel / consultants during the detailed Investigation (DPR) stage to address geological challenges anticipated in the feasibility stage. -Ensure effective implementation of project design in line with the DPR prepared during the detailed Investigation stage of the project.		

(Signature of Risk Reporter)

10.0 OPERATION OF RISK MANAGEMENT POLICY

10.1 Approval of the Policy

THDCIL's Board shall be the approving authority for the company's overall Risk Management Policy. The Board shall, therefore, monitor the compliance and approve the Risk Management Policy and any amendments thereto from time to time.

10.2 Review of the Policy

The Risk Management Policy shall be reviewed as and when required but not later than 2 years based on changes in the business environment/ regulations/ standards/ best practices in the industry by an outside consultant/organization or in-house that would present their recommendations to the Chief Risk Officer.

11.0 LEGAL FRAMEWORK FOR RISK MANAGEMENT

11.1 SEBI (LODR)

1.1 Reg 17 of SEBI (LODR), 2015 :

a) The listed entity shall lay down procedures to inform members of board of directors about risk assessment and minimization procedures.

b) The board of directors shall be responsible for framing, implementing and monitoring the risk management plan for the listed entity.

1.2 Regulation 18(3) of SEBI (LODR), 2015:

The role of the audit committee shall be to undertake evaluation of risk management systems.

11.2 DPE Guidelines on Corporate Governance

1.3 Risk Management:

Enterprise risk management helps management in achieving CPSE's performance and profitability targets. It helps to ensure effective reporting and compliance with laws and regulations and helps avoid damage to the entity's reputation and associated consequences. Considering the significance of risk management in the scheme of corporate management strategies, its oversight should be one of the main responsibilities of the Board/Management. The Board should ensure the integration and alignment of the risk management system with the corporate and operational objectives and also that risk management is undertaken as a part of normal business practice and not as a separate task at set times.

1.3.1 Board Disclosures – Risk management

1.3.2 The company shall lay down procedures to inform Board members about the risk assessment and minimization procedures. These procedures shall be periodically reviewed to ensure that executive management controls risk through means of a properly defined framework. Procedure will be laid down for internal risk management also.

1.3.3 The Board should implement policies and procedures which should include:

(a) staff responsibilities in relation to fraud prevention and identification
(b) responsibility of fraud investigation once a fraud has been identified
(c) process of reporting on fraud related matters to management
(d) reporting and recording processes to be followed to record allegations of fraud
(e) requirements of training to be conducted on fraud prevention and identification.

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Note : *THDCIL's 'Risk Management Manual' (circulated vide letter No. THDC/CS/DOP/F-131/2509 dated 14.06.2012) shall not prevail, after issuance of approved 'Risk Management Plan'.*

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Annexure-I

Illustrative Risks and Proposed Mitigation Measures

Risk Head	Risk description	Probability	Risk Rating	Proposed Risk Mitigation	Responsibility
Strategic Risk 1	**Land Risk** Delays in acquisition of land for various locations of the project such as dam, power house, switching yard etc leading to project execution challenges	High	High	1. Liaison with State Govt. Deptts. 2. Benefit sharing programs should be designed to sensitize the indirect benefits of development projects to the impacted stakeholders. 3. Create large pool of locally available skilled and employable people to ascertain less resistance from local people for land acquisition, as they will get employment from the project 4. Monitor the effectiveness of compensation, relocation, and assistance programs provided at the time of Rehabilitation & Resettlement.	Head of Project
Operational Risk 2	**GeologicalRisk:-** Land Slide during construction stage / during O&M stage	High	High	1. Land slide zone mapping of the project 2. Ensure detailed surveys / studies are carried out by competent personnel / consultants during the detailed Investigation (DPR) stage to address geological challenges anticipated in the feasibility stage. 3. Ensure effective implementation of project design in line with the DPR prepared during the detailed Investigation stage of the project.	Head of Project
Financial Risk 3	**Recovery Risk:-** Non recovery of tariffs from state governments leading to cash flow and growth restrictions onthe organization	High	High	1. Appropriate stringent payment security mechanisms needs to be enforced incase of utility default in payment. 2. In case of state utilities defaulting, liaising with State and Central Govt. for clearance of dues. 3. Create alternate modes/plan for power sale in case utility defaults.	Commercial Deptt.
Operational Risk 4	**Project Risk:-** Law and Order issues.	High	High	**1.** Proactively liaison with Govt. deptts. and maintain healthy relations. **2.** Updation of CSR policy in line with major industry standards **3.** Collaborate with the State Govt. to set up cells with the objective to sensitize the people and create awareness regarding the benefits and inherent advantages of projects. **4.** Take up the matter of Law and Order due to local agitation with the concerned administration highlighting the importance of such projects for the development of State or Region. **5.** Constitute a Social Responsibility Cell to actively engage with local administration to discuss the modalities of the company's social activities.	Head of Project
Strategic Risk 5	**Capability Risk:-** Lack of expertise in new areas of growth like renewables.	High	High	**1.** A dedicated team may be assigned to gain thorough knowledge of the Thermal, Hydro, Solar & Wind Power Sector, etc. **2.** The team may be adequately trained to develop competency in these sectors. **3.** Knowledge repository may be built for supporting creation, capture, storage and dissemination of information related to projects. This will	Design & Engineering Deptt

				enable employees to have ready access to the organization's documented base of facts, sources of information, and solutions. **4.** Engagement of technical consultants with the perspective of capacity building in the domain	
Operational Risk 6	**Disaster Risk:-** Lack of sensitization on disaster management policies	High	High	**1.** Implementation of Disaster Management Policy for the organization taking into account the local conditions and the latest technology. **2.** Training workshops on disaster management at the plant with quarterly drills for implementation of learnings from the workshops.	OMS Deptt.
Operational Risk 7	**Project Risk:-** Non availability of competent contractors in case of breakdown at site	High	High	**1.** Identify Contractors having specialized capabilities to attend major breakdown of the machines. **2.** Empanel the contractors that would be available at short notice for attending breakdowns at project sites in remote areas. **3.** Develop Contractors development programme to encourage and train contractors in execution of specialized maintenance requirements.	Head of Project
Strategic Risk / Financial Risk 8	**Compliance Risk/ Claim Risk:** Lack of standard processes to handle claims/ litigations leading to possible liabilities for organization	Medium	Medium	**1.** Prepare a claim management manual for use uniformly across the organization. **2.** Empanel reputed firms for handling national/ international arbitrations. **3.** Prepare delay files for documenting all delays from contractors/ suppliers in case of claims at the time of project commissioning.	Head of Project
Strategic Risk 9	**Project Risk/Time Risk:-** Empowering Project Management division to avoid delays in Project execution	High	High	**1.** Develop an internal mechanism for proper monitoring of project execution (Integrated Scheduling, regular updation and corrective actions, cost components). Review the effectiveness of procedures in case project is delayed by 5% of the project time schedule to improve the planning and execution to avoid time or cost overruns. **2.** Ensure adequate resource allocation and efficient mobilization to overcome manpower shortage through effective project monitoring. **3.** Continuous monitoring of the controllable delays to protect the company from adverse effects of time and cost overruns. Uncontrollable delays to be recorded and passed onto the beneficiaries via tariff as per CERC guidelines **4.** Implement Management information systems (MIS) that would improve coordination between various deptts. and enable quick response and prompt decision making as well as bring to attention areas of short-fall impeding the projects	Head of Project
Strategic Risk 10	**Feasibility Risk:-** Lack of adequate social, environmental and technical feasibility assessment before taking up projects	High	High	**1.** Create a framework for taking up new projects. Only projects passing the filter should be taken up. **2.** Before taking up projects, rapid study on preliminary feasibility to be carried out. The study should encompass the following aspects: a. Displacement and social appreciation b. Probability of obtaining and status of various statutory clearances	Design & Engineering Deptt

				c. Engineering and Geology **3.** Taking into account the following parameters in feasibility assessment of Hydro Projects : a. Dam Height b. HRT tunnel length c. Maximum tunnel height d. Tariff e. Geological conditions of Dam, Tunnel f. Construction Material g. Diversion Design Flood h. Sediment Risk and Management i. Power evacuation and construction power availability	
Strategic Risk 11	**People Risk: -** Lack of Succession Planning, Manpower attrition and non - development of core competency.	High	High	**1.** Manpower planning/assessment and Succession Planning may be performed annually. **2.** Adopt various mechanisms via Financial/Non-financial reward & recognition systems including Performance related incentive based on individual/ group performance which would lead to an increased organizational productivity, **3.** Adopt HR tools like employee satisfaction survey, exit interviews and external benchmark study to frame and implement a company-wide retention policy.	HR&A Deptt.
Strategic Risk 12	**People Risk:-** Lack of training to keep employees abreast with the industry's latest technologies or with evolving industry demands/international standards	High	Medium	**1.** Define mandatory training hours per employee and review and revise the training curriculum periodically to develop employees' core competencies. **2.** Perform Training Need Analysis exercise to design the training curriculum for all the organizational roles. **3.** All parameters may be considered while drafting of training calendar including appraisal forms of employees, special request from Deptt. Heads, request from employee, new business line, new system implementation etc.	HR&A Deptt.
Operational Risk 13	**Political Risk:-** Time and cost overrun due to lack of adequate/ timely clearances/ approvals from the respective Ministries	High	High	**1.** Identify the various State Govt. deptts. such as Environment and Forests which contribute mainly towards the delays and sensitize them about the various issues relating to the project. **2.** Analyze the procedures involved in various clearances and interactions with the Govt. and suggest improvement opportunities.	Head of Project
Operational Risk 14	**Natural Calamity:-** Risk of flooding of power house, dam breakage due to floods and unprecedented rains	Medium	High	**1.** Indemnify the company against possible losses by insuring the projects/ power plants under natural calamity risk insurance policy. **2.** Develop Disaster Management plan for each power plant / project with delegation of responsibility and set up nodal disaster Management committee to provide guidance to prevent any such loss. **3.** Ensure that the company's disaster Management plan is captured in the	Head of Project and OMS Deptt.

				State's Master Disaster Management Plan. **4.** Establish Real Time Flood Forecasting System at upstream of barrage to have prior information of flow sufficiently before flood reaches the barrage sites. **5.** Pre and post monsoon inspections by Dam Safety Team may be carried out regarding the health status of Dam and their remedial measures may be implemented.	
ESG Risk 15	**People Risk:-** Lack of adequate safety measures at project sites/stations may cause injuries to personnel.	Medium	High	**1.** For safety measures at project sites/stations, all persons at sites must comply with Personal Protective Equipment (PPE). **2.** Safety Officer or Dedicated personnel in charge of safety measures may be posted at the power station/project that will ensure compliance to the PPE requirements. **3.** Display of Safety signs at sites.	Head of Project and OMS Deptt.
Operational Risk 16	**Project Risk:-** Time and cost overrun due to award of contracts without ensuring availability of land and clearances.	High	Medium	**1.** The Contracts division may ensure all legal documents related to clearances and land acquisitions are approved by the authority and are in place before awarding the contract. **2.** Land acquisition may be started as a parallel activity to clearances thus allowing for issues related with land acquisition to settle in due course of time.	Head of Contracts Deptt.
Operational Risk 17	**Contracting Risk:-** Non settlement of claims of various contractors leading to disputes resulting into arbitration and legal complications besides delay in projects.	High	Medium	**1.** Resolve delays in contractor payment and cost escalation, if any on account of force majeure event immediately to prevent project delays and cost implications. **2.** A dedicated dispute resolution committee may be constituted for every project to Ensure early settlement of claims. **3.** The committee shall work on an ongoing basis throughout the project with adequate financial powers for early detection and settlement of the contractual dispute. **4.** Appointment of Independent Engineer in line with the guidelines of GoI.	Head of Project
Cyber Security Risk 18	**Technology Risk:-** Insecure IT and Communication systems may result in its exposure to cyber threats.	High	Medium	1. Information security Management System (ISMS) may be implemented in order to eliminate or minimize the impact of various security related threats and vulnerabilities. 2. IT security policy may be developed/ reviewed and implemented to minimize disruption of IT services due to malware attacks and also pilferage of information. 3. The organization may determine its requirements for the continuity of IT infrastructure in adverse situations, e.g. during a crisis or disaster. A disaster Recovery Site as part of business continuity plan may be developed at an alternate location.	Head of IT Deptt.
Operational Risk 19	**Contracting Risk:-** Stoppage of work due to labor problems of Contractor.	Medium	Medium	1. Develop a mechanism to ensure payment from contractor to sub-contractor and from sub-contractor to labors on a timely basis. 2. The Engineer in charge at the power stations/ project sites may ensure minimum wages are being paid to the labors on a timely basis.	Head of Project

Operational Risk 20	**Project Risk:-** Selection of improper construction equipment/ technology especially for underground works.	Medium	Medium	1. A technical advisory committee may be formed comprising of personnel from relevant field and experience to review and advise the selection of the construction equipment/ technology. 2. Build a Knowledge Management System which will be the repository of all project related information. This repository may be regularly updated with all minute details of the kind of terrain of a project, kind of machinery used, equipment failures encountered etc. This information may be used as a base to understand the reasons for equipment failures and the new projects may take those factors into account.	Head of Project And Design & Engineering Deptt
Operational Risk 21	**Project Risk:-** Delays in power equipment supply which may lead to delays in commissioning of the project.	Medium	Medium	1. Introduce appropriate penalty clause in the power equipment purchase agreement for delay in delivery of project critical power equipment. 2. Consider suppliers with proven technologies for supply of power equipment to reduce dependence on its existing source of power equipment. 3. Liaison with Ministry of power, Govt. of India for timely delivery of power equipment by the Public Sector Undertaking (PSU) supplier in case the delay is hampering the on-time completion of its project. 4. Expediting Group for Supply.	Head of Project
Operational Risk 22	**Project Risk:-** Delays in award of contracts/ retendering.	High	Low	1. Setting of appropriate PQ Criteria. 2. Maintaining data base of prospective Contractors. 3. Develop a uniform tender approval procedure for avoiding contract litigations that arise due to issues raised on tendering procedures. 4. All Contracts may cover the scope of work in details clearly defining roles and responsibilities of the contractor to avoid litigations due to difference of understanding of scope. 5. Feedback mechanism may be developed wherein learnings from various Contracts shall be updated and carried forward to other Contracts to make them more robust.	Head of Contracts Deptt.
Financial Risk 23	**Credit Risks:-** Non - realization of outstanding dues from the beneficiaries.	Medium	High	1. Involve the Ministry of Power (GOI) and form a policy on realizing outstanding dues from the beneficiaries through Central Plan Assistance which will help them in getting the pending payments. 2. Ensure that there are adequate penalty clauses in the ensuing PPAs for the beneficiary if they delay the payment. 3. Create an early warning system to the defaulting entity based on the recovery of dues in the last six months.	Head of Commercial Deptt
Financial Risk 24	**Liquidity Risks:-** Lack of Investments for financing projects due to high gestation period of projects and/or higher finance cost due to increase in interest rates.	High	Medium	1. Encourage the availability of longer−term finance from Indigenous Financial Institutions, International sources including ECAs (Export Credit Agency), World Bank and issuance of fixed rate Corporate Bonds for longer tenure. 2. Ensure that completion period of projects offered for funding have been prepared in realistic manner in advance through detailed technical studies and site investigation etc with a clear contractual framework.	Head of Finance Deptt

Financial Risk 25	**Project Risk:-** Delays in projects due to problems of cash flow with the working contractors.	Medium	Medium	1. Establish appropriate governance structure at the project level to help the working contractors resolve their cash flow problems by providing support in day-to-day supplier management activities such as contract management and financial management. 2. Ensuring timely payment to the Contractors. 3. A dedicated dispute resolution committee may be constituted for every project to ensure early settlement of claims.	Head of Project And Head of Finance Deptt
Compliance Risk 26	**Socio-Political Risk:-** Inadequate monitoring of Rehabilitation & Resettlement (R&R) may lead to ineffective implementation of R&R program and may result in agitations in the local area leading to delays in commencement of the project.	Low	High	1. Follow the R&R policy for preventing delays on account of R&R issues. 2. To liaise with State Govt.'s R&R department/directorate and with District collector/ administration. 3. Constitute a Cell which may actively engage with local administration as part of local area development committee to discuss the modalities of the company's social responsibility. 4. Carry out proactive CSR activities in key areas including communicating benefits of projects to the public at large in the project area to ensure public buy-in for land acquisition and R&R activities.	S&E Deptt.
Compliance Risk 27	**Regulatory Risk:-** Non adherence to CERC guidelines for tariff petition may lead to financial implications.	Low	Medium	1. The commercial Team may ensure that the tariff petitions are as per the CERC guidelines. 2. The tariffs, before getting finalized, may be internally reviewed at different levels between the commercial departments to ensure that they are in line with the CERC guidelines.	Commercial Deptt
Strategic Risk 28	**Market Dynamics:** Time and cost overrun of hydro power projects and its impact in a competitive bidding environment.	Medium	Medium	1. Under existing provisions of PPA, tariff as determined by CERC is recoverable from beneficiaries. However, future scenario to be monitored and PPAs to be framed so as to protect the company from adverse effects of time and cost overrun. 2. Develop an internal mechanism for effecting proper assessment of project cost components & improve the planning and execution to avoid time or cost overruns. 3. Implement a system of regular review of costs and fix appropriate responsibility centers for managing costs of the project. 4. Develop a mechanism to record the instances and review the effectiveness of procedures in case project is delayed by 5% of the project time schedule. 5. Build a Knowledge Management System which will be the repository of all projects related information. This system can be used to understand the reasons for cost and time overruns and estimation for new projects shall take those factors into account. 6. Formulate a mechanism to evaluate the loss of power sales realization due to delayed commissioning of a project and its resultant impact on top and bottom line of the company with the cost of delay.	Head of the Project And Head of MPS

Operational Risk 29	**Project Risk:-** Non-availability of space in designated dumping areas	Low	High	1. Utilization of available space in optimized way. 2. Assessment of approximate muck quantity and total available space for dumping and accordingly initiating necessary steps well in advance for finding additional dumping sites.	Head of the Project
Operational Risk 30	**Project Risk:-** Accidents at site and Strikes by workers	Medium	High	1. Ensuring all safety measures being complied at site. 2. Workers should be sensitized for safety measures. 3. Project authorities should regularly meet with workers' team.	Head of the Project
Operational Risk 30	**Project Risk:-** Shortage of construction material in borrow area	Low	High	1. Assessment of availability of useful material in borrow area. 2. In case of shortage, initiating necessary steps well in advance for finding other borrow area or arrangement of alternate source of construction material.	Head of the Project

Note: Above Risks and Mitigation Measures are just for illustrative purpose. Identification of risks and determining it's mitigation measures shall be as per actual situation.

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