# ABSTRACT

Reinforced concrete cooling towers are effectively used for cooling large quantities of water in thermal power stations, refineries, atomic power plants, steel plants, air conditioning and other industrial plants. Cooling towers are large, thin shell reinforced concrete structures which contribute to power generation efficiency, reliability and to environment protection. It works on the principle of temperature difference between the air inside the tower and outside the tower. Hyperbolic shape of cooling tower is usually preferred due to its strength and stability and larger available area at the base. They contribute both efficient energy output and to a careful balance with our environment. These shell structures are subjected to environmental loads such as seismic and thermal gradients that is stochastic in nature

Regular draft hyperbolic cooling towers are the describing land signs of Power station. They contribute both to a productive vitality yield and to a cautious equalization with our surroundings. These structures are most productive measures for cooling of warm power plants by minimizing the need of water and staying away from warm contamination of water bodies. The present project, manages the investigation of design and element examination of hyperbolic cooling towers. The material properties of the cooling tower are density, Young's modulus, Poisson ratio and the thickness of RCC. Modal and structural analysis is being carried out for cooling tower using finite element method with help of shell elements. Deflection, Maximum principle stress, frequencies and mode shapes are acquired and reported in detail in the documentation along with the observations.



**Keywords**: Hyperbolic Cooling Tower, structural analysis, density , SHELL Element, Modal Analysis