

Risk Assessment

Storage & Transportation of Ethanol

The proposed project will produce Ethanol which is a flammable liquid. Leaving aside earthquake, cyclone, lightning, flood, arson, war and sabotage, the possible emergencies that can arise in the proposed project are:

- Failure of vessels resulting in the release of Ethanol.
- Failure of pipelines resulting in the release of Ethanol.
- Failure of process equipment resulting in the release of Ethanol.
- Specific failures like accidental spillage of Ethanol during handling.
- Consequential fires involving the flammable materials.

Fire Fighting & Protection System

The firefighting system will be designed in conformity with the recommendations of the Tariff Advisory Committee (TAC) of Insurance Association of India. While designing the fire protection systems for this power station its extreme ambient conditions need special attention. Codes and Standards of National Fire Protection Association (NFPA) will be followed, as applicable. The different types of fire protection / detection system envisaged for the entire project are given below.

- Hydrant System for entire area of power plant.
- High Velocity Water Spray System (HVWS) for Generator Transformer (GT), Unit Auxiliary transformer (UAT), Station Transformer (ST), and turbine lube oil canal pipe lines in main plant, Boiler burner front, diesel oil tank of DG set, main lube oil tank, clean and dirty lube oil tanks.
- Medium Velocity Water spray system – Cable gallery / Cable spreader room, Transfer points and F.O. pumping station and F.O. tanks.
- Foam system for Fuel oil tanks.
- Portable and mobile fire extinguishers for entire plant.
- Fire tenders (minimum 2 Nos.).
- Inert Gas System for Central Control Room, Control Equipment Room, Computer Room and UPS Room in the TG building.
- **Fixed Foam System:** This system is provided for LDO and HFO storage tanks. The water for the foam system will be tapped from the Hydrant system.
- **Inert gas system:** Inert gas system will automatically detect and suppress fire within a protected area. The system will be a total flooding fire suppression system with automatic detection and/or manual

release capability. Complete system design will be in accordance with NFPA. The inert gas system will be generally provided above false and below false ceiling of Central Control room, UPS Room, Control equipment room and Computer room.

Fire Detection and alarm system

Fire Detection and alarm system will be provided for all Central Control room, Control Equipment Room, battery rooms, all switchgear rooms / MCC rooms, Cable spreader room and Computer rooms located in Power block area and in other auxiliary buildings.

A microprocessor-based Fire Detection and Alarm system shall be provided for the entire plant area consisting of Intelligent Analog Addressable type detectors. The system will consist of a central monitoring station and the main Fire Alarm Panel (FAP) located in unit control room and one fire alarm and control panel and repeater panel provided in the fire station office

An industrial siren will be installed in the turbine generator building. The siren shall have an audible range of 3 km and produce a minimum sound level of 80 dB (A) above any other noise likely to persist for a period longer than 30 seconds. Additionally all exit routes and hallways in each occupied building shall be provided with sounders and flash light to facilitate safe evacuation in case of fire in the area. All necessary instruction and warning plates will be displayed.