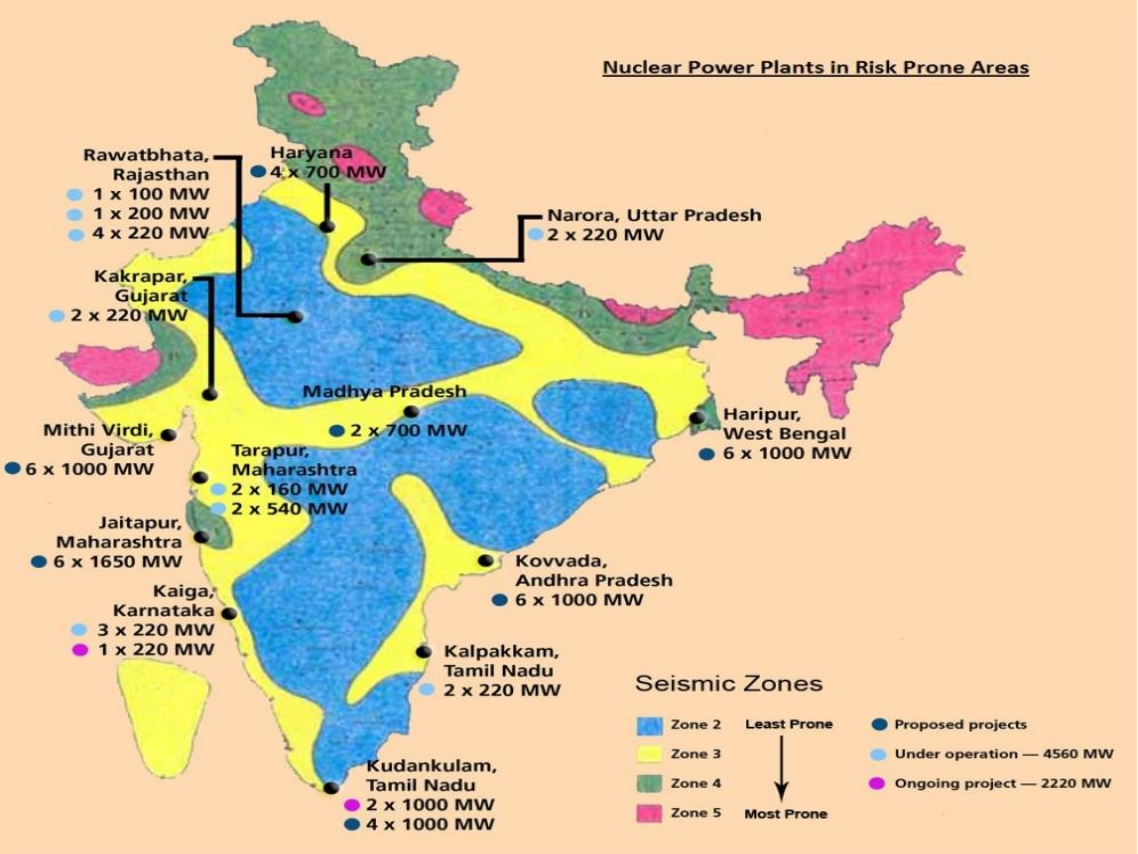
Student Notes:

Nuclear Hazard risk in India

India has traditionally been vulnerable to natural disasters on account of its unique geo climatic conditions.

India has a flourishing and largely indigenous nuclear power programme. It aims to supply 25% of electricity from nuclear power by 2050. Nuclear and Radiological Emergency can arise in a nuclear facility at plant level leading to plant/ site or offsite emergency depending upon the extent of its impact on the surroundings.



Nuclear Hazard Mitigation Strategies

- There are four ways in which people are protected from identified radiation sources:
  - ✓ **Limiting time:** In occupational situations, dose is reduced by limiting exposure time.
  - ✓ **Distance:** The intensity of radiation decreases with distance from its source.
  - ✓ **Shielding:** Barriers of lead, concrete or water give good protection from high levels of penetrating radiation such as gamma rays. Intensely radioactive materials are therefore often stored or handled under water, or by remote control in rooms constructed of thick concrete or lined with lead.
  - ✓ **Containment:** Highly radioactive materials are confined and kept out of the workplace and environment. Nuclear reactors operate within closed systems with multiple barriers which keep the radioactive materials contained.

Institutional and Legislative Framework in India

- **The Atomic Energy Act, 1962 is the main Nuclear Legislation in India**. With increased emphasis on power generation through nuclear technology, the threat of nuclear hazards has also increased.
- The **Department of Atomic Energy (DAE)** has been identified as the nodal agency in the country in respect of manmade radiological emergencies in the public domain. A Crisis Management Group (CMG) chaired by the Additional Secretary, DAE has been set up. In the event of any nuclear/radiological emergency in the public domain, CMG is immediately