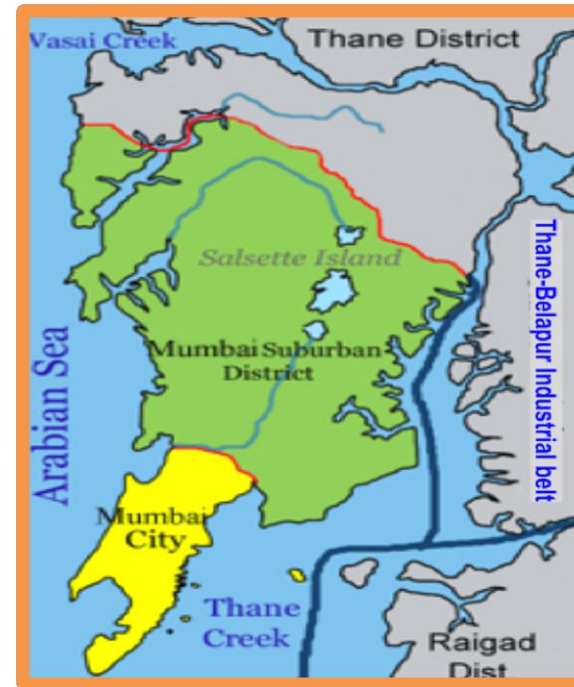
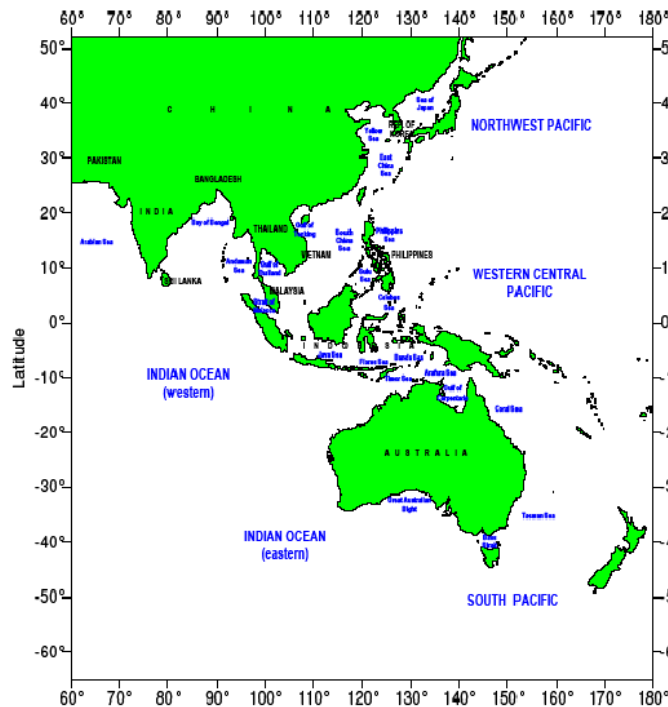
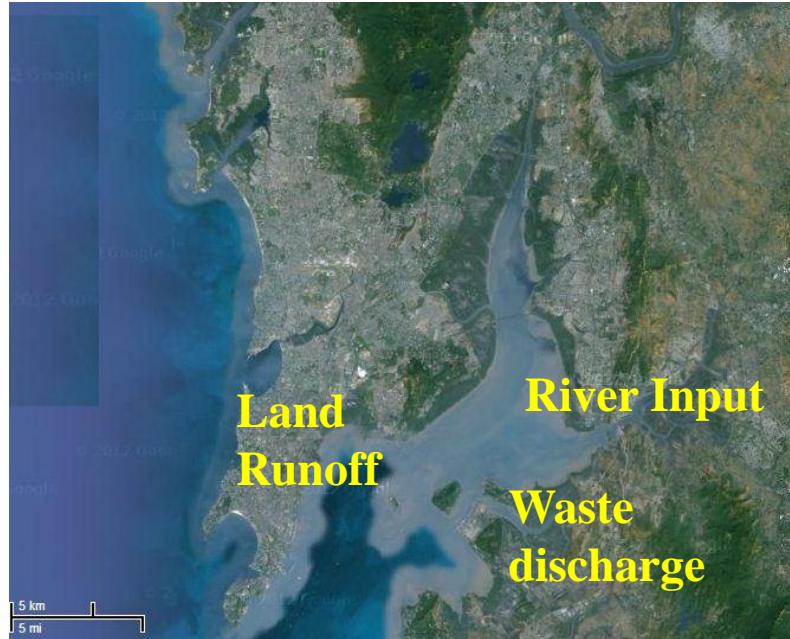


Marine Ecology and Application of Isotopes and Nuclear Techniques: Highlights of Some Studies in India

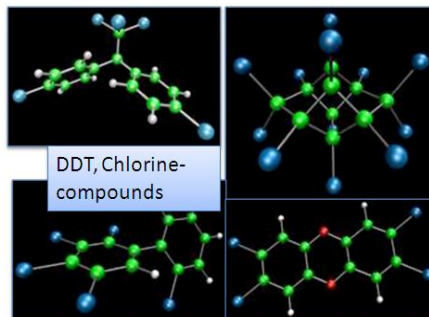
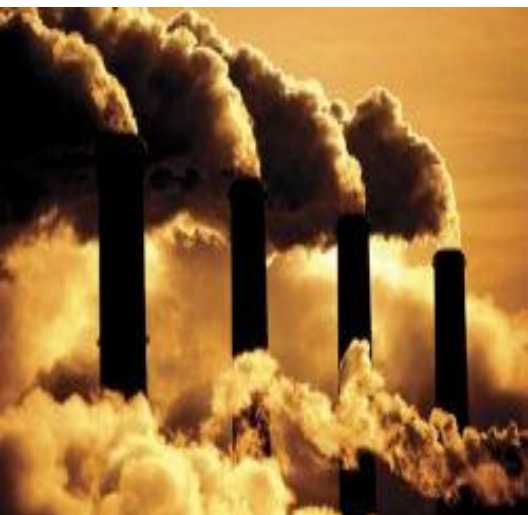


A.K. Ghosh
BARC, India

Marine Pollution



Samples of water , sediment analysed



Heavy metal pollution declining

Ecological Studies around NPPs

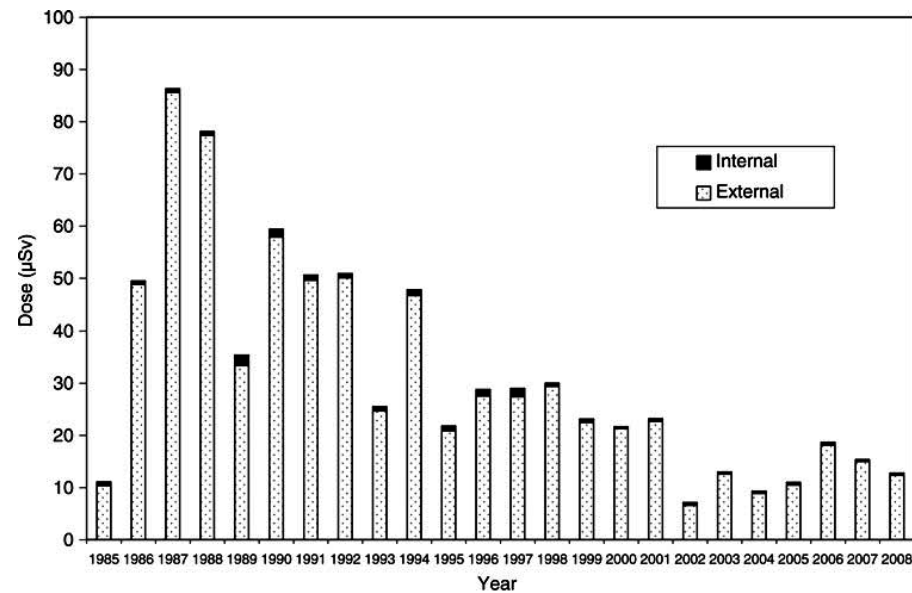
No release from an NPP of

- **NO_x. CO₂ etc.**
- **Flurocarbons**
- **biowaste or toxic chemicals**

Release of radioactivity well below prescribed regulatory limits

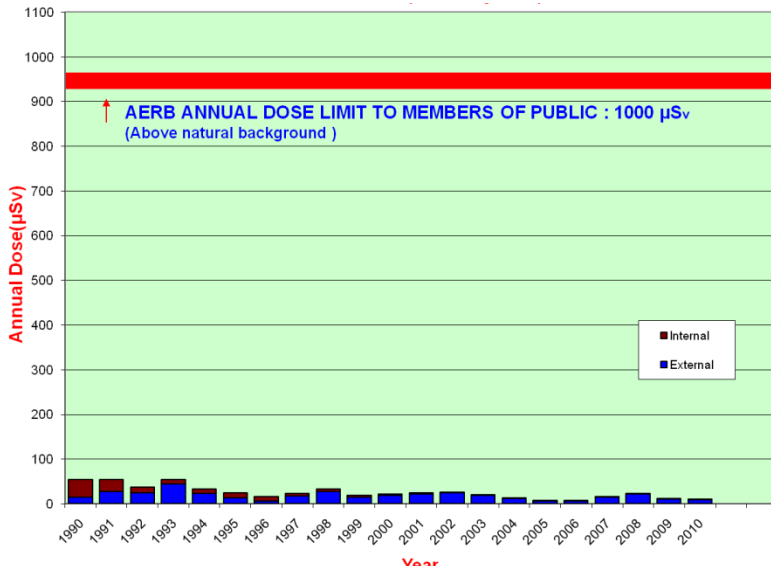


Ecological Studies around NPPs

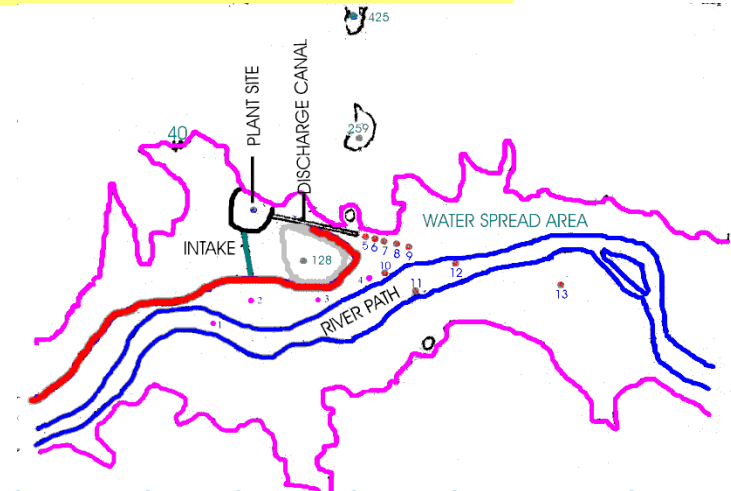


Dose to the members of public at 1.6 km

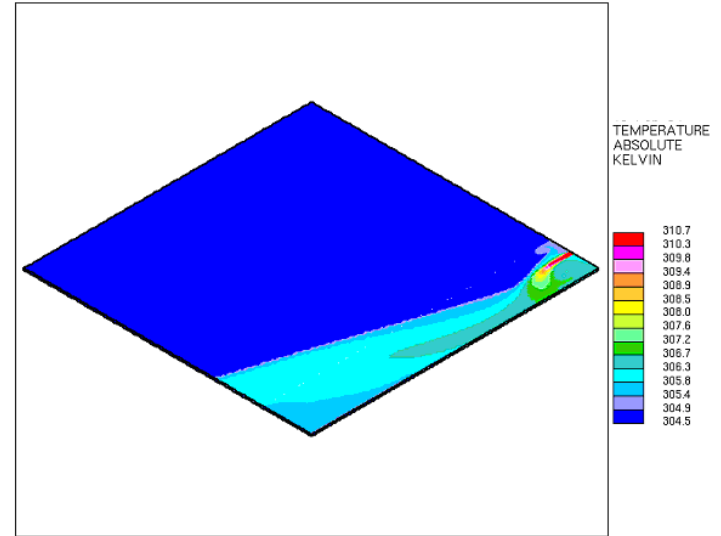
Annual dose to public from NPP far below the regulatory limit of 1000



Maximum dose is less by a factor of 20 of the limit and dose at larger distances is much lower

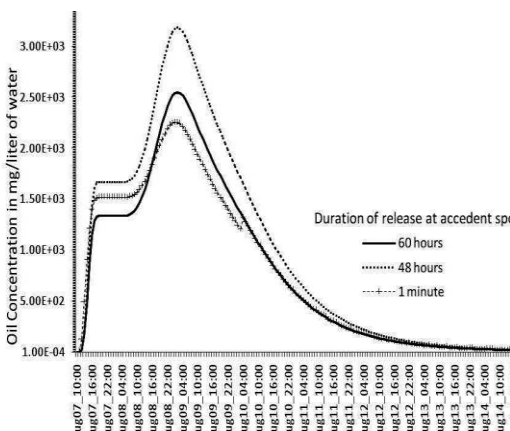
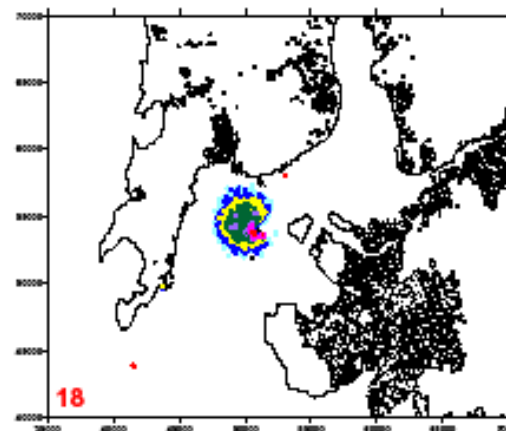
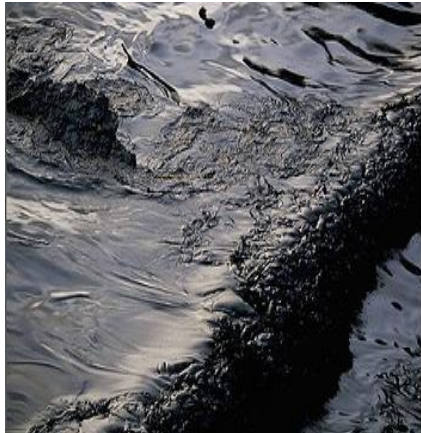
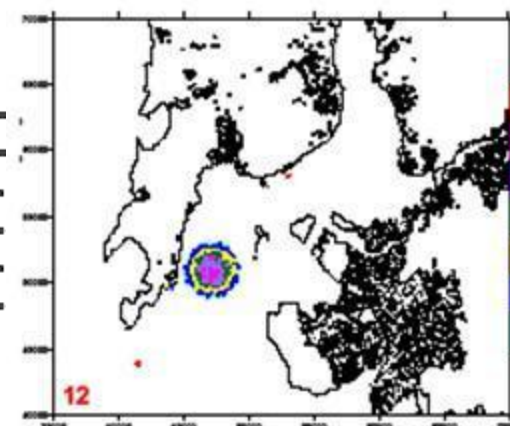
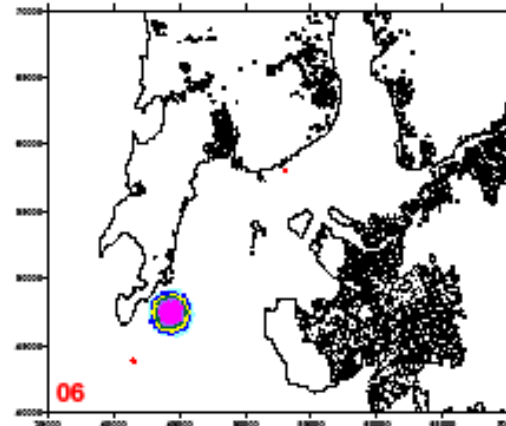


Thermal Ecological Study around Kaiga NPP



Thermal and Ecological Effects confined within a small mixing zone. Model results validated by field study

Analysis of Oil Spill



Progression of oil spill in time and space analytically predicted

Sludge Hygienisation by Gamma Radiation

BARC plant in Vadodara - for safe disposal of sludge and agricultural use

**operation of SHRI: sludge
hygienization research irradiator:
3 kGy dose in 500 kCi ^{60}Co plant**

**radiation hygienisation-reduction
of total bacteria, fecal coliform;
suitable to grow useful micro-
organisms → enriched manure →
use of hygienised sludge for
agricultural applications – high
demand from farmers**



Thank you for your attention

