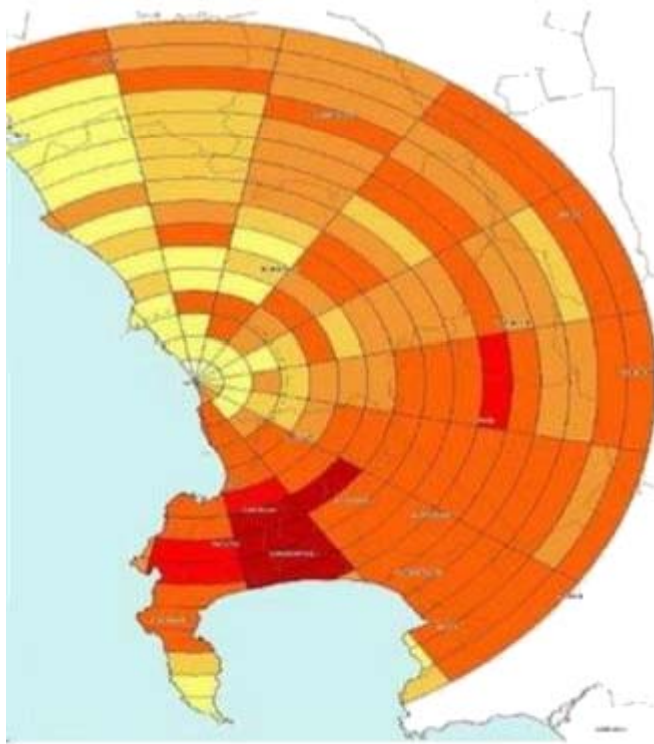


# IRP2 – Input Parameters



**K.A.A.**



# Public Participation Process

- Registration period
  - Too short initially; has left the impression registration is closed
- Parameter determination period
  - A crucial component, yet no public participation process
  - 3 days after meeting to finalise submissions unreasonable
- Further schedule unclear
  - Lack of response to communication by Mr Ompi Aphone
  - KAA supports letter from SAFCEI
  - Proposed schedule too brief for such a major policy decision
  - Nuclear-1 EIA public participation period ? days
  - IRP2 is far more far reaching; should receive at least as much time
  - Should modify IRP1 quickly to include renewables in time for MTEF...
  - ... then do IEP and IRP2 thoroughly

# FULL Life Cycle Cost

## Beyond GENERATION Life Cycle Cost

- **Mining**
  - Mine tailings: increased mobility, containment, AMD
- **Fuel fabrication plant**
- **Construction**
- **Transport of ore and fuel**
  - Accident risks
- **Operation**
  - Routine emissions
  - Accident risk
- **Decommissioning of nuclear plants**
  - Expensive engineering task
- **Waste**
  - LLW and MLW transport and storage
  - HLW (spent fuel) transport, repository





# Acid Mine Drainage



# Andries Coetzee's Dam

## 900mg/kg U





>200m<sup>3</sup> in 2008?

30x20x5 = 3600m<sup>3</sup>?



# Example of incident


## 1987 Goiânia, Brazil Event

- Thieves break into abandoned medical facility
- Capsule contained 20g fascinating powder: glowed blue in the dark!
- Family and friends paint onto body like glitter
- Container transported by public bus to scrap dealer
- Ambulances contaminated
- > 112 000 people screened
- 249 people found contaminated (151 internally)
- 85 buildings contaminated, 7 had to be destroyed
- **3 500m<sup>3</sup> radioactive waste generated**
- Near total cessation of economic intercourse with the rest of Brazil
- Similar to drums stolen from Pelindaba in 1993?
- **Minor incident** – no fire, no explosion, no malicious intent

<http://www.aps.org/publications/apsnews/200403/backpage.cfm>

# Decommissioning: How



- Three phases
  - Fuel removal
    - High level waste storage facilities – none operating yet
  - Reactor equipment and building demolishing & removal
    - All material from reactor area becomes radioactive waste
  - Site release
    - Sometimes planned after 100 years or more, sometimes never
- Costs
  - Discounted future costs makes it seem cheap 

# Missing from parameters

- Mine remediation
  - Fuel based generation distinct from wind, solar
  - Must be included, to avoid bias in favor of coal, nuclear
- Spent fuel/waste handling
  - Solution likely to be expensive; ; e.g. \$9bn for Yucca
  - Must be included, to avoid bias in favour of nuclear
- Human health impacts
  - Routine operation and incidents/accidents
  - Must be included, to avoid bias in favour of coal, nuclear
- Accident clean up and compensation
  - Risk and costs
  - Must be included, to avoid bias in favour of nuclear