San Onofre PWR
Reactor Building

36 Ci/m³

[2 – 4 r/h]

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Reactor

- **Shroud**: 3 million Ci/m$^3$  
  $> 600$ k r/h

- **Thermal shield**: 0.15 million Ci/m$^3$  
  $> 80$ k r/h

- **Vessel Inner Cladding**: 1.58 thousand Ci/m$^3$  
  [2 - $> 5$ r/h]
Radioactivity with time

[Graph showing the decay of radioactivity with time, with labels for 55Fe, 60Co, 63Ni, 94Nb, 59Ni dose rates, and total dose rate.]
Decommissioning Alternatives

- **Dismantlement** – remove all radioactive materials. Terminate license, except for spent fuel and hot core components. In VT, hopefully return to greenfield.

- **Safstor** – remove much of external contamination. After cooling 20 years, all fuel in storage casks. Remove cooling water pipes. Seal up reactor internals and wait. Revise license.
NUHOMS
Dry Shielded Canister

NUHOMS-24P Design

- Shield Plug
- Outer Cover Plate
- Inner Cover Plate
- Top End
- Drain and Fill Port
- DSC Shell
- Support Rod
- Guide Sleeve
- Spacer Disk
- Siphon Tube
- Basket Assembly

Bottom End
Ram Grapple Ring
Outer Cover Plate
Shield Plug
Inner Cover Plate

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Loading Configuration
Horizontal Storage Module
Spent Fuel Pool
Transfer Cask
Key Issues

- **Burnup**: heat of individual fuel assemblies and the total. Requires distributed heat load; hottest on outside; some SONGS fuel too hot; cool down over 20 years.
- **Criticality** – must be some burnup; boral plate thickness.
- **32PTH2 DSC** not licensed for high burnup fuel.
Cask 1.0
Then what? Canister into transport overpack
Heavy Haul Configuration

Issues

- Timing – 20 year cooldown, high burnup fuel
- Who pays? DOE fuel, decom fund adequacy, heat exchanger screw-up
- What remains? Fuel mausoleum, valuable site is wasteland
- What can be done? Navy evicts SCE?