



Decommissioning San Onofre

Nuclear Generating Station

Safety of Liquid Batch Releases

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37

Batch Release Process

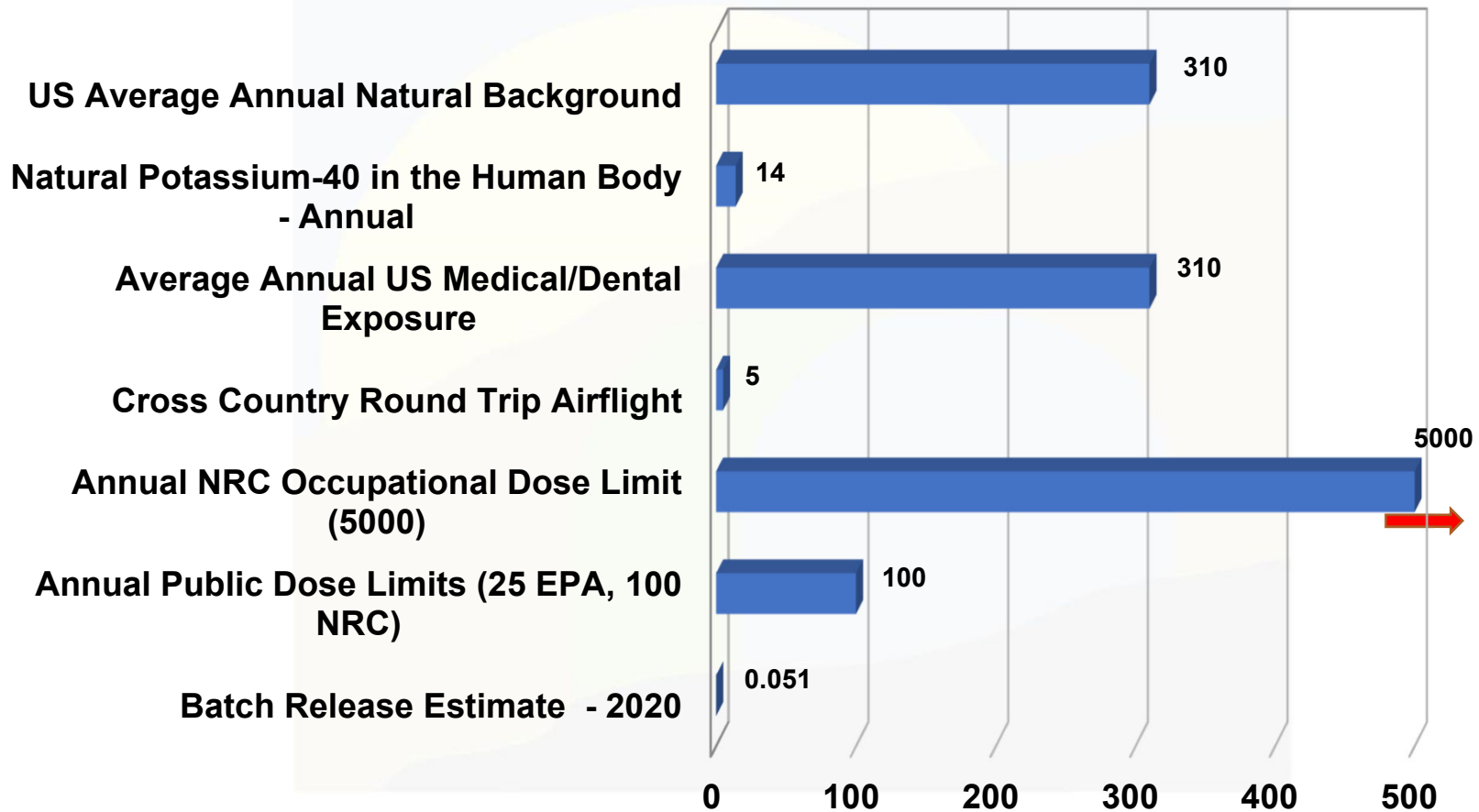
- Water accumulated, isolated in tanks, filtered, ion exchanged, samples analyzed in lab
- Permit developed with limits (radionuclide concentrations, estimated dose to a maximally exposed member of the public, radiation monitor set-points, etc.)
- Once approved, operators start required dilution and discharge pumps
- Water discharged along with dilution water into discharge conduit, enters ocean in diffuser section ~50 feet below sea level and over a mile offshore, mixes with vast quantities of ocean water

What Happens?

- Radiation exposure estimated using concentrations at the point of discharge (the diffusers) and is therefore very conservative
- Dose based on someone eating seafood that might accumulate radioactive material (fish, crustaceans)
- The regulatory-required Radiological Environmental Monitoring Program confirms safety by validating the releases have no impact on the environment by sampling fish, crustaceans, ocean water, shoreline sediment, ocean bottom sand, and kelp (reviewed by the State and NRC and publicly available including SONGS Community website: <https://www.songscommunity.com/stewardship/responsible-stewardship>)
- The conservatively estimated dose from all 2020 liquid batch releases is 0.051 mrem

39

Dose Perspective (millirem)



Is it Safe? - Yes

- Estimated dose to a member of the public was 0.000722 mrem for the most recent 2020 batch release
 - Less than one hour on the beach yields ~25 times more dose (cosmic, terrestrial, and radon) than the average release dose
 - If you drank all 20,000 gallons, dose would be 4,000 times less than EPA drinking water limit (4 mrem/yr)
 - Estimate for the entire year 2020 is 0.051 mrem
- Compare to natural background of about 1 mrem per day

Conclusion

- Well below regulatory limits: safe levels established by federal agencies (EPA, NRC) and below Water Board limits
- National and international scientific organizations note that any dose less than about 10,000 mrem per year have no measurable effects in humans
 - Safe levels recommended by National Council on Radiation Protection & Measurements and International Commission on Radiological Protection
- Conclusion - very safe for swimmers, surfers, public