San Onofre Nuclear Generating Station (SONGS) Overview
Southern California Edison

- Largest electric utility in CA
- Providing electricity for more than 120 years
- 50,000 square mile service area
- 12,000 miles of transmission circuits
- 100,000 miles of distribution circuits

SCE Fuel Portfolio

- Nuclear 18%
- Renewables 16%
- Coal 10%
- Large Hydro 5%
- Natural Gas 51%
U.S. Nuclear Power Plants

- U.S. has 104 nuclear power reactors

SONGS 2 & 3
SONGS Unit 2 & 3

- Started construction: 1974
- Unit 2 on line: August 1983
- Unit 3 on line: April 1984
- Cost: $4.5 billion
- Operating Licenses: Feb/Nov 2022
- 1,070/1080 megawatts net per unit
- NPDES Permits expired in May 2010

Unit 1 was shutdown and dismantled after 25 years of service
Environmental Impact

Air
• No direct emission of greenhouse gases. Emissions comparable to life-cycle emissions from renewable sources.

Water
• Thermal – none detected

• Ecological – typical for any power plant located near an ocean, river, or lake

Solid Waste
• Used fuel – safely stored, nationally managed

Land Use
• Relatively compact
Environmental Impact

Once-through-cooling is typical for any power plant located near an ocean, river, or lake and impacts the marine environment.

SONGS is designed to minimize impact by using advanced technology to significantly reduce fish losses by capturing and returning most fish to the ocean alive.

SCE is fully mitigating marine impacts.
316(b) Compliance-Fish Return System

- Fish are guided into fish handling chamber
- Elevator lifts fish and pours into return pipe
- Efficiency varies with species
- Initial studies showed 75-96% efficiency
- 11 year study from 1984-1994, 1999 had an overall average of 70%
Environmental Mitigation

San Dieguito Wetland Restoration

Creates more than 160 acres of new coastal wetlands

Restored tidal flows, natural habitat and vegetation

Protects the wetlands from flood-borne sediment buildup

Significantly increases fish and wildlife
Environmental Mitigation

Wheeler North Giant Kelp Reef

174-acre artificial reef off San Clemente

Adds significant marine habitat

Creates marine habitat for as many as 50 varieties of fish and invertebrates

Increases recreational opportunities including fishing and diving
Hubbs White Sea Bass Hatchery

- Constructed to help restore white sea bass populations to California
- SCE contributed approximately $5 million to the project
- In 2001, over 100,000 white sea bass were released to the ocean
- Capable of producing over 350,000 juvenile fish annually
San Onofre Benefits

Provides voltage support and stability to the grid.

Reduces our dependence on coal, natural gas, oil

Since San Onofre has begun producing power, it has avoided over 180 million metric tons of greenhouse gas emissions and approximately 100,000 metric tons of smog producing pollutants.
Community Benefits

More than $200 million annually through more than 2,000 high-paying jobs for skilled workers

An additional $300 million in local economic benefits from the current steam generator replacement project

Approximately $20 million annually in property taxes supporting local services

More than $300,000 annually in employee and company contributions to local charities

Provide tours & presentations to >5000 people/yr
How a Nuclear Plant Works

Diagram showing the components of a nuclear plant, including containment structure, reactor vessel, control rods, pressurizer, steam generator, turbine, generator, condenser, and transmission towers.
Thank you!

Questions?