San Clemente Green
Citizens for a Sustainable Future

Request to add agenda item re: Public Safety Issues at San Onofre Nuclear Generating Station

Honorable Mayor and Council Members:

As a concerned citizens group we respectfully request that you consider allowing us to make a ten minute special presentation regarding public safety issues at the San Onofre Nuclear Generating Station. We ask to be put on your agenda as soon as possible. This matter of public safety has taken on even greater urgency especially for those of us within the reach of a radiation plume extending 50 miles and beyond. With the on-going disaster in Fukushima, which took place a little more than a year ago, we have grown in numbers and regional reach, including people within your own community. We are all in this together, regardless of city boundaries.

As you may already know, there was a recent event where radiation was released into the environment from a ruptured tube in one of the recently installed critical steam generators. All four steam generators are showing signs of unprecedented wear. This has resulted in the current unplanned closure of both nuclear reactors (Units 2 and 3) since January 2012.

Edison is losing about a million dollars a day while the plant is down, so they are highly motivated to restart the plant as soon as possible. We have reason to believe that the plant may be restarted prematurely and would like to share information we have that explains why we are concerned. Edison has implied there may be rolling blackouts if San Onofre is shut down through the summer. However, we have reports from the California Independent Systems Operator (CAISO) that confirms there is a safe margin of surplus electricity for the summer. If the steam generators fail again, huge amounts of radiation could be released into the atmosphere, permanently impacting our communities and our families. We, the public, simply can't allow this critical decision to be made without ample opportunity to review this approval process.

So far, all of the other cities with whom we have shared our "Awareness Campaign" have supported our call for tighter enforcement by the Nuclear Regulatory Commission to prevent the public from being exposed to hazardous levels of radiation. San Clemente, Laguna Beach, Solana Beach and Irvine, have each written strongly worded letters to those who may help make a difference in this dangerous situation. A copy of one such letter from the City of Irvine is included as part of this package. Several other cities are currently taking this matter into consideration. It is our hope, that after hearing our well documented concerns, you will join the other cities and compose a similar letter on behalf of the many people you represent.

There is a justifiable sense of urgency to allow concerned communities to be heard. I have attached a few additional documents which are particularly significant. These and many other referenced resources can be found on our website, SanOnofreSafety.org. A reply to our request to be on your agenda as soon as possible would be much appreciated.

Thank you,

Gary B. Headrick
gary@sanclementegreen.org

IMPORTANT: Safety information for anyone within 50 miles of San Onofre Nuclear Plant

At the Fukushima Dai-ichi nuclear disaster, U.S. officials recommended Americans in Japan evacuate 50 miles. If you live or work in one of these five counties, you may be within the San Onofre 50 mile evacuation zone:

Orange, San Diego, Los Angeles, Riverside, San Bernardino

There is no safe emergency plan.
Over 8.4 million people living in a 50 mile radius need to evacuate if there is an emergency at San Onofre. The Nuclear Regulatory Commission (NRC) does not require a current safe emergency plan for San Onofre (NRC Reg. 50.47).

Radiation from San Onofre will blow inland due to prevailing on-shore wind, so the safest evacuation location is upwind in the Pacific Ocean.

The NRC is under investigation for reducing safety standards in order to keep older nuclear plants running. The NRC has stricter rules for new plants than it does for existing nuclear plants.

San Onofre is not required to add safety systems that the NRC deems too expensive for the value of the lives they could save. The NRC value of a human life is roughly 1/3 to 1/2 the value used by other federal agencies ($3 million vs. $5-9 million).

San Onofre was redesigned for a 7.0 earthquake, but sits next to a fault capable of an 8.0 earthquake -- 10 times more powerful and long overdue.

San Onofre unsafely stores tons of toxic radioactive waste and continues to produce over 600 pounds every day. The waste is toxic for thousands of years.

San Onofre's "30 foot tsunami wall" is only 14 feet above high tide.

The NRC does not require seismic or tsunami studies for license renewal. San Onofre was originally licensed to shut down in 2013, but was extended to 2022. Next year they plan to ask for an extension to 2042. The plant was designed in 1973 for a 40-year lifespan.

San Onofre has 10 times more safety violations than the industry average making it the most dangerous nuclear plant of all 64 plants (and 104 reactors) in the nation.

The NRC says San Onofre continues to have serious Safety Culture problems, including poor decision making and employees reluctant to report safety problems for fear of retaliation from their management.

Human error contributed to all major nuclear disasters in the world. One human error contributed to Southern California's 9/8/2011 massive power blackout. It can happen at San Onofre.

In the event of a severe accident at San Onofre, radiation leaks could create a permanent "dead zone" beyond Los Angeles, San Diego, Catalina, and Riverside.

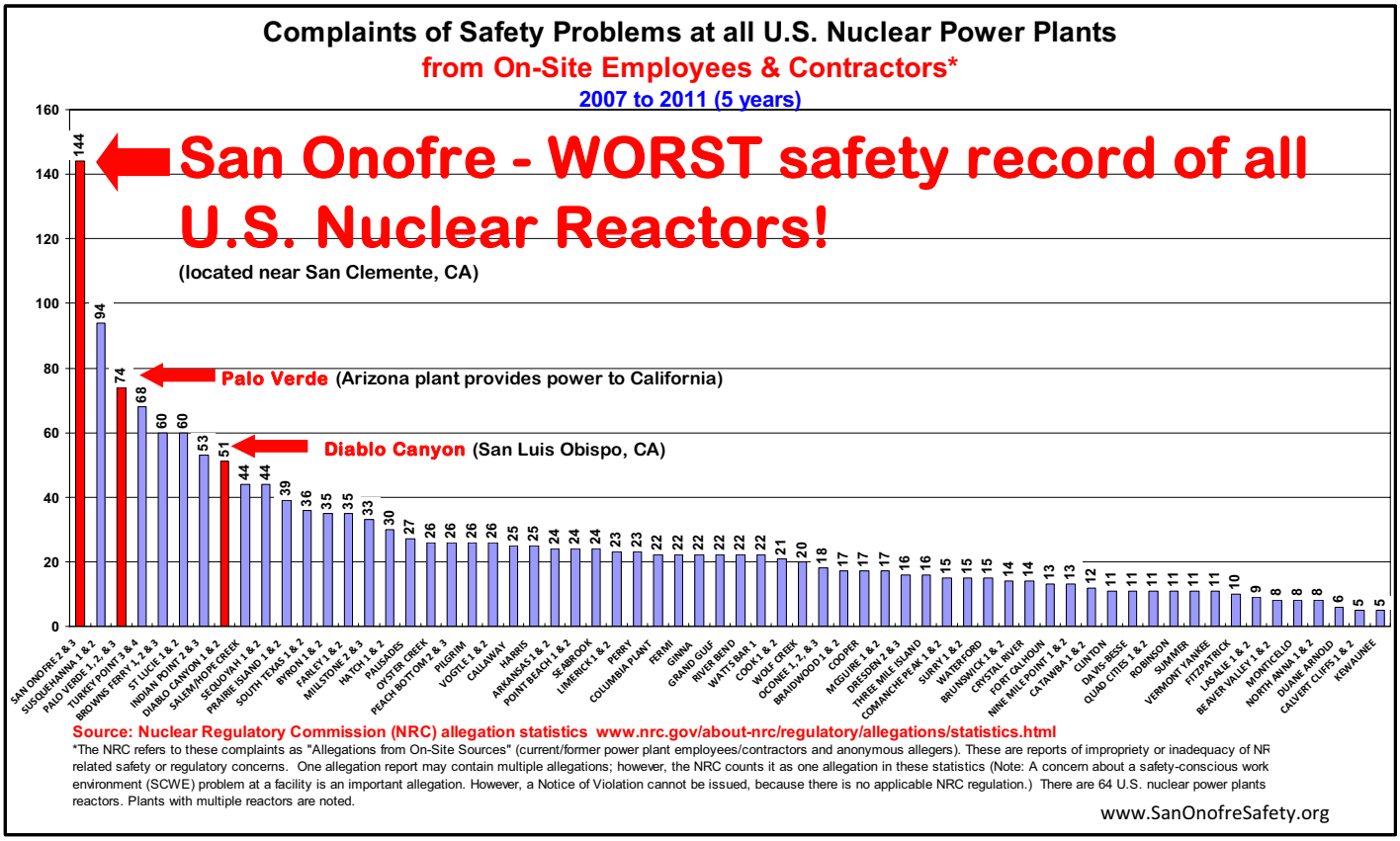
Children and pregnant women are most vulnerable to radiation. Cancer and genetic damage go undetected for years.

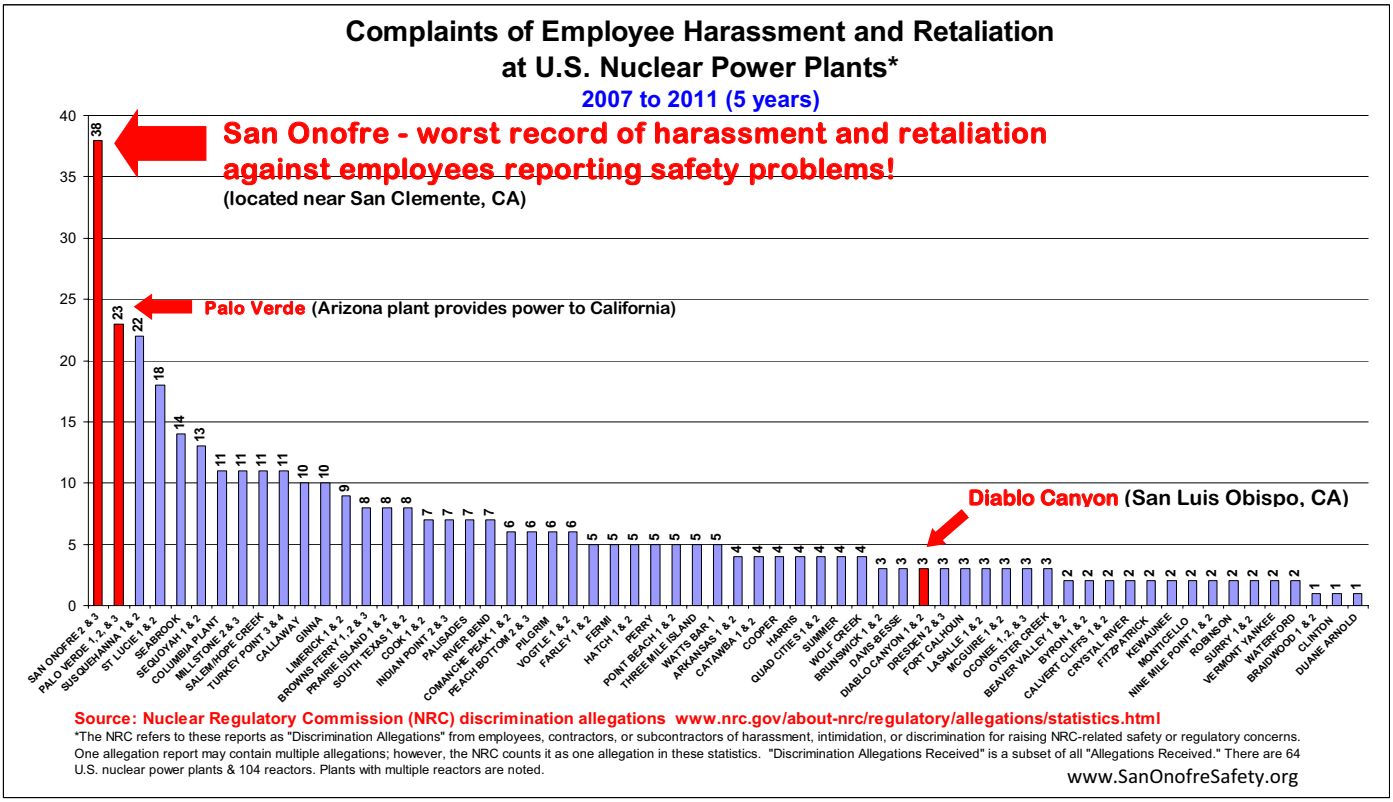
Your home and property cannot be insured against a nuclear disaster and reactor owners have limited liability.

Sources: CA Energy Commission www.energy.ca.gov/nuclear/california.html, Nuclear Information & Resource Service www.nirs.org, US Geological Survey www.usgs.gov, Nuclear Regulatory Commission www.nrc.gov, CA Public Utilities Commission www.cpuc.ca.gov

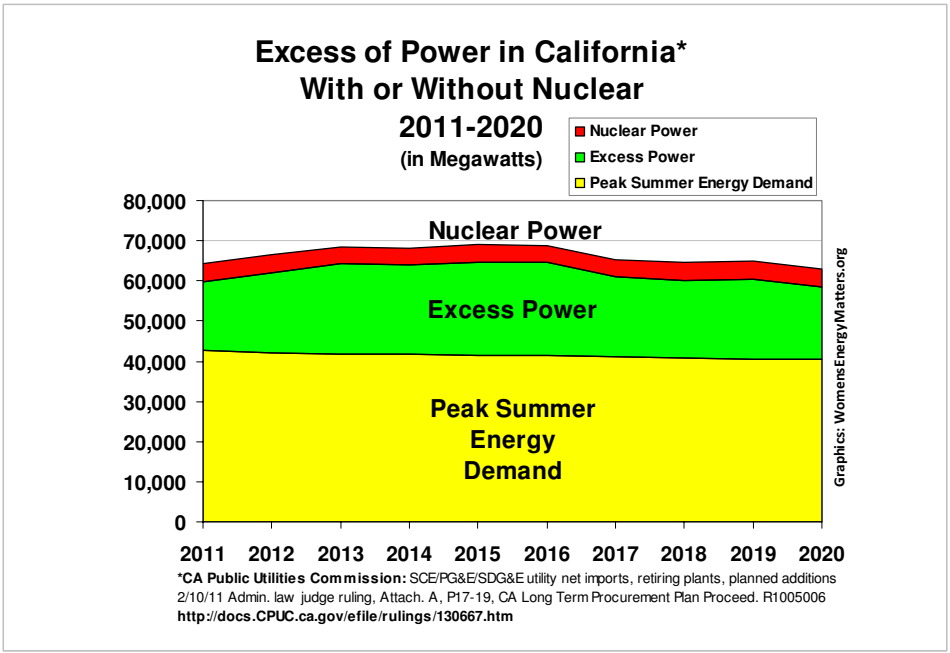
www.SanClementeGreen.com, www.SanOnofre.com, **www.SanOnofreSafety.org**
CREED - Coalition for Responsible Ethical Environmental Decisions
ROSE - www.ResidentsOrganizedforaSafeEnvironment.wordpress.com, www.AceHoffman.org

SAN ONOFRE NUCLEAR POWER PLANT HAS THE WORST SAFETY RECORD





No Rolling Blackouts with San Onofre Shut Down



CALIFORNIA HAS EXCESS POWER without nuclear power plants.[1]

Includes power needed for peak summer demand, voltage and grid stability.[2]

NUMEROUS OPTIONS AVAILABLE to avoid rolling blackouts.

California Independent System Operator (ISO) recommendations to avoid rolling blackouts:[3]

- **Restart Huntington Beach (HB) gas-fired units 3 and 4.** The Los Angeles area reserve is short by only **240 MW** under heavy load conditions (with San Onofre off-line). This is mitigated by restarting HB units, increasing import capability to San Diego by **450 MW**.

Reserves (MW) without San Onofre	Without Huntington Beach 3 & 4		With Huntington Beach 3 & 4	
	Mild Conditions	Heavy Load	Mild Conditions	Heavy Load
Reserve available	710	266	1060	616
Reserve required	603	603	603	603
Reserve margin [excess]	107	-337	457	13

[Estimates for additional megawatts (MW) available through load management, renewable energy, conservation and energy efficiency were **NOT** provided in the ISO presentation, but can increase reserve margin significantly.][4]

- **Conservation and demand response will provide additional margin.**
  - Fully fund Flex Alerts and restart CPUC 20/20 program. [SCE is planning a 10/10 program.]
  - Fully utilize available demand response (e.g., SCE air conditioner cycling). [SDG&E excludes San Clemente, Laguna Beach, Laguna Woods and Laguna Hills from air conditioner cycling]
  - Seek additional military and public agency demand response.
  - Take longer-term steps to increase available demand response system-wide.
- **Accelerate Barre-Ellis transmission upgrade, accelerate completion of Sunrise and related outage planning.**

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[1] 2/10/2011 CA Public Utilities Commission: Administrative Law Judge Ruling Attachment A, Pages 17-19, CA Long Term Procurement Plan Proceedings R005006 http://docs.CPUC.ca.gov/efile/rulings/130667.htm

[2] 2011-2012 ISO Transmission Plan http://www.caiso.com/Documents/Board-approvedISO2011-2012-TransmissionPlan.pdf

[3] 3/22/2012 ISO Summer 2012 Operations Preparedness presentation, Neil Millar, Executive Director, Infrastructure Development http://www.caiso.com/Documents/BriefingSummer2012OperationsPreparedness-Presentation-Mar2012.pdf

[4] SanOnofreSafety.org Energy Options http://sanonofresafety.org/energy-options

50 Mile Evacuation Area as Ordered for Americans in Japan and Present 10 Mile Evacuation Area

Known Faults Exceed Design Basis for 7.0 Earthquake
8.4 Million People live in a 50 Mile Radiaus

San Onofre Steam Generator Problems

"When your nuclear reactor is springing leaks and radioactive pipes are deteriorating twenty times faster than they should, it's a big deal, and no amount of nuclear spin by Edison or the NRC can hide that fact."

--- Friends of the Earth

Why is San Onofre shut down?

San Onofre has been shut down since January 31, 2012 due to defective replacement steam generators.

- Generators are critical for cooling the reactors. Failure can cause uncontrolled releases of radiation.
- A generator tube in reactor Unit 3 leaked radiation into the air after being installed less than a year.
- All four replacement steam generators show unprecedented premature wear.
- They cost ratepayers $680 million (in 2004 dollars). Before they failed, Edison said with this newer technology the generators should last 40+ years.

Can the steam generators be safely repaired?

Nuclear Engineer Arnie Gundersen said that the safest option is to replace the steam generators.

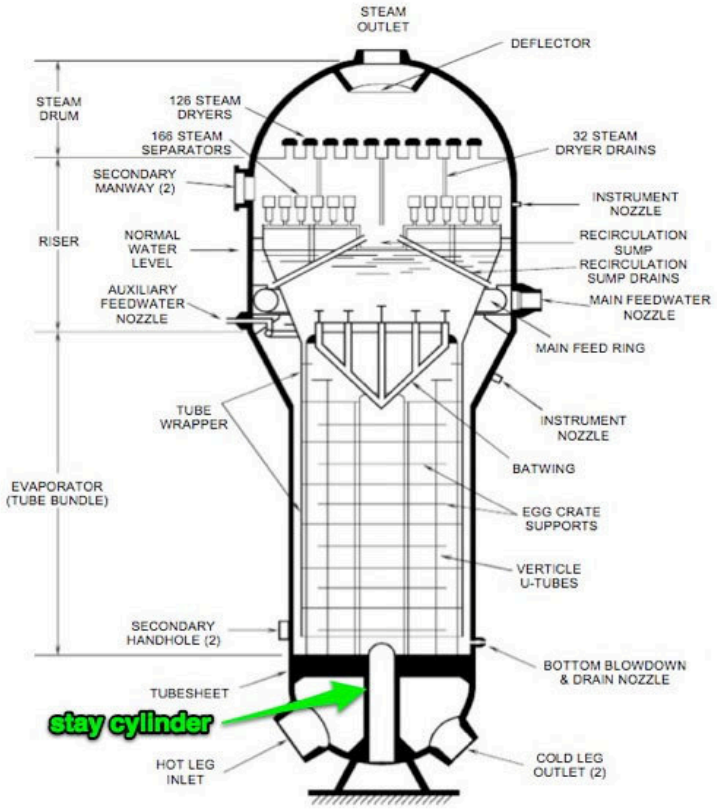
Southern California Edison made design changes to the replacement steam generators resulting in tube vibrations. This caused unprecedented extensive damage to some of the 9727 tubes within each generator.

What is the impact of the design changes?

- The tubes are now "at risk of bursting in a main steam accident and spewing radioactivity into the air".
- The top of the new steam generator is now "starved of water, therefore making tube vibration inevitable".

What are the significant design changes?

- The original design had a unique tube support to prevent vibration – these supports were changed in the new design and 377 tubes added to each generator.
- The main structural **stay cylinder** was removed (see diagram). This support cylinder was designed to secure the generator and prevent vibration – exactly the kind of vibration that seems to be causing tube degradation.
- All of these changes necessitated pressure and flow changes in the generator's operation.



Typical Combustion Engineering Steam Generator

Will plugging tubes and reducing power help?

- Vibration is the result not the root cause of the steam generator problems at San Onofre.
- Plugging tubes cannot repair design changes that cause the tubes to collide with each other.
- Reducing power does not provide a remedy for the underlying structural problems that are creating the vibration that has damaged and will continue to damage the tubes.
- Reducing power will not change the pressure inside or outside the tubes. Previously damaged tubes will continue to vibrate, damaging surrounding tubes and tube supports and worsen the existing damage.
- Lower power might create a resonate frequency at which vibration might increase without notice.
- Historical evidence at other reactors has shown that operating at lower power has not been an effective solution.

Arnie Gundersen, Chief Engineer at Fairewinds Associates, is a 40-year veteran of the nuclear power industry. A former nuclear industry senior vice president, he earned his Bachelor and Master Degrees in nuclear engineering, holds a nuclear safety patent, and was a licensed reactor operator. During his nuclear industry career, he managed and coordinated projects at 70 nuclear power plants around the country.

http://fairewinds.com/content/san-onofre-bad-vibrations

Sukhee Kang, Mayor

www.cityofirvine.org

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April 30, 2012

The Honorable Gregory Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jaczko:

The disaster at the Fukushima Daiichi Nuclear Power Plant in Japan has renewed world-wide concern regarding the safety of commercial nuclear power. The City of Irvine is located 22 miles north of the San Onofre Nuclear Generating Station (SONGS) and is home to 220,000 people. Irvine has a workday population of nearly 350,000. A 50-mile radius around the San Onofre Plant extends into five California counties. This area includes the three most populous California counties – Los Angeles, San Diego and Orange Counties – as well as San Bernardino and Riverside Counties.

The City is fortunate to have Federal elected officials who are well informed and active in the Nation's ongoing discussion about nuclear power.

After careful deliberation, on behalf of the citizens of the City of Irvine and my City Council colleagues, the Irvine City Council requests the following:

- Support for Senator Feinstein's April 20, 2011 letter to you requesting that the Nuclear Regulatory Commission (NRC) examine "seismic and tsunami hazards, operational issues, plant security, emergency preparedness, spent fuel storage options and other elements of a nuclear power plant's 'design basis' within the scope of the relicensing process." While we are aware that the NRC used best possible science of that era during the SONGS Unit 2 and 3 licensing process in 1982 and 1983, respectively, much has been learned and modern technologies have been developed since SONGS was licensed. In addition to the effects of age-related degradation of the facility. We agree with Senator Feinstein that: "These new threats logically should be considered in a relicensing process, just as they would be in the licensing of a new nuclear power plant in the United States."

  All pertinent information should be taken into account before relicensing is considered. This includes the need for permanent off-site storage solution for spent nuclear fuel to be identified as a condition for relicensing. The continued accumulation of spent fuel on site presents a significant hazard that must be solved at the federal level and a solution implemented before continuing to generate more spent fuel. In California, researchers have recently found new faults close to nuclear power plants, and tsunami experts have learned that submarine landslides can

generate local tsunamis far larger than previously believed.

Accordingly, we ask that the NRC adopt the following positions:

- Mindful that Senators Feinstein and Boxer have called upon the NRC to swiftly adopt the "Near-term Task Force Recommendations for Enhancing Reactor Safety in the 21st Century," *we urge the NRC implement the recommendations without delay. For SONGS, special care should be given to reevaluating seismic and flooding hazards.*

- *Expand the Emergency Planning Zone to 50 miles.* The current 10-mile radius is inadequate. We acknowledge the focused effort of the current Inter-jurisdictional Emergency Planning Committee, as we have remained involved as a nearby agency. We also acknowledge that there may be different emergency planning needs at differing distances from SONGS. However, increased strategic emergency planning efforts to include vicinity communities that are clearly part of evacuation plans and potentially within plume zones should be incorporated into an expanded Emergency Planning Zone. The "Recommendations for Enhancing Reactor Safety in the 21st Century" provides only a cursory discussion of Fukushima which required additional protections up to *and beyond* a 16-mile (20 kilometer) area.

- *Revise the risk/benefit analysis that the NRC uses to ensure that it adequately assesses public risk levels.* There have been important lessons learned regarding human performance, and unforeseen human error. We acknowledge that there is a *Human Reliability Analysis* component in the NRC's high-level Probabilistic Risk Assessment. We also acknowledge that the NRC emphasizes employee training, certification and management, and believe that SONGS employees are earnest in their desire to safely conduct their daily duties. Management, by SCE in this case, is a critical component here.

  We have learned that human error contributed to catastrophic nuclear plant failures and exacerbated conditions following failure. Recent years-long human performance and safety culture issues at SONGS bring urgency to our concerns. Human performance and safety culture issues at SONGS took at least four years to address – and included willful violations. These issues were placed on the Regulatory Response Action Matrix. There were multiple letters from NRC and SCE, multiple NRC staff reviews, and at least two independent assessments before changes were made showing sustained improved performance to NRC's satisfaction as of the September 6, 2011 closure of the "chilling effect" letter. In its March 4, 2009 Annual Assessment letter, the NRC made a number of specific disturbing findings:

  - "Known performance problems have persisted and new performance problems have emerged"
  - "Ineffective use of human error prevention techniques"
  - "The effectiveness of your initiatives has not been evident and this annual assessment is the third cycle where substantive cross-cutting issues were identified in human performance and problem identification and resolution."

We acknowledge that regular assessment, monitoring and correction to maintain an effective feedback loop is important to safely operate a nuclear power facility. We also recognize the transparency within which NRC conducts this monitoring. However, this does not reduce our concerns related to human performance – especially management and safety culture issues. There are 440 commercial nuclear power plants worldwide, with 104 in the United States. Not included among those are three nuclear generating stations that experienced catastrophic failure well short of their expected 40-year life – related in part to human performance.

- We urge you to require utilities to move spent fuel rods to dry cask storage as soon as those rods can be safely moved. The storage of spent fuel rods on site at SONGS continues to be of concern to the Irvine City Council and is an area we believe that the NRC can take more immediate action. Our understanding is that the spent fuel rods stored in dry cask storage at Fukushima Daiichi were unaffected by the tsunami. Although movement of spent fuel away from the community will require many federal agencies to reach agreement, we believe the movement to dry cask storage is an area of regulation within the authority of the NRC.

- We request that the NRC withhold permission to restart San Onofre Nuclear Generating Station Units 2 and 3 (both shut down since January 31, 2012 because of excessive and inexplicable wear of steam generators) until the NRC provides full assurance that Units 2 and 3 will not exhibit any of the current vibration, corrosion, and degradation problems during the remaining 10 years of licensed operations.

On behalf of the citizens of Irvine and my elected colleagues, I respectfully request that your agency respond to the above requests. As representatives of the people we serve, it is our City Council's duty to be informed and to act upon our knowledge. Where we cannot exercise authority, we will advocate for the public's best interest. We appreciate the role of the NRC as the government agency that ensures that commercial nuclear power plants operate safely.

Sincerely,

Sukhee Kang
Mayor

cc: Irvine City Council
Sean Joyce, City Manager
Senator Barbara Boxer
Senator Dianne Feinstein
Congressman John Campbell