Comment Set 1
Michael M. Marinak, Ph.D.

California Public Utilities Commission
c/o Nicolas Procos
Aspen Environmental Group
235 Montgomery St. - Suite 395
San Francisco, Ca 94104

December 27, 2004

Dear Commissioners,

The San Onofre nuclear power plant is an extremely valuable resource to California. Its exceptionally low power production costs continue to save ratepayers nearly one billion dollars annually. It produces no significant air pollution and greenhouse gases, helping California to meet its clean air goals. It is a very reliable source of high quality electricity and does not rely upon imported fossil fuels. Its huge 2200 MW capacity plays an important role in helping California avoid continuing rotating blackouts. 1-1

SCE's plan to replace the steam generators is essential for consumers to continue benefiting from this resource. Steam generator replacement has been successfully accomplished at dozens of nuclear power plants around the country. In many cases it was accomplished in only slightly longer time than required for a typical refueling outage.

The San Onofre plant produces reliable emission-free electricity to over 2 million California residents. It's power production costs are among the lowest of any source in the state, averaging just 1.7 cents per kilowatt hour. In 2002 alone San Onofre avoided the generation of 14 thousand tons of nitrogen oxide and 10 thousand tons sulfur dioxide air pollutants. DCPP also avoided emissions of 11 million tons of carbon dioxide greenhouse gases. The reduction in air pollution is equivalent to removing two million cars from the roads. And its fuel is not imported. Low costs, cleaner air and a reduced trade deficit are among the reasons the President's energy policy relies upon increased use of nuclear energy to meet our expanding electricity needs. Furthermore several public opinion polls, including a recent Field poll, confirm that the vast majority of Californians support nuclear energy.

The costs of replacing the steam generators amortized over several years will amount to only a few tenth of one cent per kilowatt hour. This aggregate production cost is far, far lower than any alternative available in California. Therefore the commission should support the steam generator replacement

Comment Set 1, cont.
Michael M. Marinak, Ph.D.

project and rule soon that reasonable costs incurred in this endeavor are prudent.

1-1

California faces a real possibility of rotating blackouts in coming years. Commisioner there is no technology available that could replace San Onofre's huge 2200 MW capacity reliably and at reasonable cost, without producing large amounts of greenhouse gases and air pollution. Generating power from natural gas instead would cost far more, at least 6 cents per kilowatt hour, and perhaps much higher as natural gas prices continue to increase. Sizeable costs would also be incurred for the construction for new gas plants, assuming they could be sited, and not violate the clean air act. Rotating blackouts would result if sufficient new generating capacity could not be constructed.

Windmills cannot replace the plant's generating capacity. Windmills produce low quality, unreliable power. Power dispatchers must always work to maintain the delicate balance between power generation and consumption. Dispatchers can compensate for fluctuations in wind power only when wind farms supply no more than about 10 percent of the power in a large grid. The multi-state blackout of the northeast in 2003 reminds us of the necessity of maintaining grid stability. There are times when the wind is calm everywhere. At these times the power must come from somewhere else. While wind turbines do reduce use of fuel, they do not allow a utility to retire so much as one power plant. The utilities must maintain full reserve to handle the situation when the wind does not blow. In other words, wind turbines do not add meaningful capacity to a system. Wind power electricity costs are far higher than electricity production costs for San Onofre.

There is also the problem of enormous land usage and visual blight associated with wind farms. At prime locations wind farms generate an average of 1.2 W/m^2. Producing average power equal to the combined output of the Diablo Canyon and San Onofre plants, if such sites could be found, would require covering a swath of land about 5 miles wide stretching from San Francisco to Los Angeles. The already large problems with many thousands of bird deaths annually at California wind farms would soar. Such a project might change the state's weather patterns. Its stochastic wind power would generate anywhere between zero to 70% of the state's demand, with wild, unpredictable, uncontrollable fluctuations in between. Again the grid operators could not adjust for such large wild fluctuations. We would

Comment Set 1, cont.
Michael M. Marinak, Ph.D.

be stuck with more expensive, stochastic wind power and an enviromental impact on a scale biblical proportions.

Solar photovoltaics have similar problems with reliability and enormous land usage. With an electricity cost of 25 cents per kilowatt hour photovoltaics remain one of the most expensive methods for producing electricity, which is precisely why so little of it is in use.

Denying SCE's ability to replace the steam generators would burden ratepayers with BILLIONS of dollars in needless increased costs.

We must preserve the San Onofre power plant because it reduces electricity rates, and helps California achieve its required reductions in air pollution. San Onofre adds important diversity to the state's electricity resources, reducing both our dependence on imported fuels and our foreign trade deficit. It's high quality, reliable power is needed to avoid future rotating blackouts.

Sincerely,

Michael Marinak

Michael M. Marinak, Ph.D.
49 Arbolado Drive
Walnut Creek, CA
94598

Responses to Comment Set 1
Michael M. Marinak, Ph.D.

1-1 The comment notes that SONGS is a valuable resource that provides base-load power with limited direct emissions. The comment goes on to describe the benefits provided to the electrical system and fuel supply diversity by SONGS in its existing condition, and this does not require a response. The second portion of the comment supports replacing the steam generators and notes that successful steam generator replacement has successfully occurred at other sites.

The comment also addresses and supports the economics of the Proposed Project. Issues related to project cost are not addressed under CEQA, as noted in Draft EIR Section A and Section D.1.2.5. The ratemaking proposal is a focus of the CPUC General Proceeding. In the General Proceeding, the CPUC must balance the environmental impacts of the Proposed Project with the economic consequences of cost recovery that would be sponsored by the ratepayers. Section A.5 of the Draft EIR describes how the CPUC uses non-environmental information in the decision-making process.

The comment also states that there are no technologies that could reliably and cost-effectively replace the base-load capacity of SONGS without producing large amounts of air pollution. Various replacement technologies are available that produce low levels or zero emissions, although most tend to be intermittent energy sources. Section C.6 of the Draft EIR describes the various scenarios under the No Project Alternative that include natural gas combined cycle power plants; transmission facilities; alternative energy technologies such as solar thermal, photovoltaics, wind turbines, geothermal power, biomass power, fuel cells; and system enhancements including demand-side management and distributed generation. Section D.1.2.3 notes that it would be speculative to forecast exactly how any replacement power would be provided. The comment also notes that wind power alone can not replace the base-load electricity generated by SONGS. Throughout the Draft EIR, the environmental impacts of development and operation of wind turbines, including the requirement of large land areas to generate sufficient electricity, visual impacts, and bird mortality, are described as part of the analysis for the No Project Alternative.

Comment Set 2
Russell D. Hoffman

San Onofre EIR Project

From: Russell D. Hoffman [rhoffman@animatedsoftware.com]
Sent: Sunday, January 30, 2005 8:23 AM
To: Nicolas Procos, CPUC Project Manager
Cc: sanonofre@aspeneg.com
Subject: SHUT SAN ONOFRE

January 30th, 2005

To Whom It May Concern,

Please put me on all mailing lists for information regarding San Onofre Nuclear WASTE Generating Station (known to you as SONGS because the California PUC (like SCE) ignores the waste which is generated there and is now hazardous to our life, our economy, and our land). 2-1

Also, please review the legality of Southern California Edison's libel of this author in a recent (Dec. 2004) document distributed to all 1500 employees of the plant. To review the document, as well as terrorist threats to the plant, please visit this web site:

http://www.animatedsoftware.com/environm/onofre/2005/sce_memo/sce_memo_2004.swf
or try:
http://www.animatedsoftware.com/environm/onofre/2005/sce_memo/sce_memo_2004.html

Thank you in advance for what little consideration you might give this request.

Sincerely,

Russell D. Hoffman
Concerned Citizen
POB 1936
Carlsbad, CA 92018

****
** THE ANIMATED SOFTWARE COMPANY
** Russell D. Hoffman, Owner and Chief Programmer
** P.O. Box 1936, Carlsbad CA 92018-1936
** (800) 551-2726
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** Fax: (760) 720-7394
** Visit the world's most eclectic web site:
** http://www.animatedsoftware.com
****

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Responses to Comment Set 2
Russell D. Hoffman

2-1 The contact information provided in the comment and at the May 12, 2005 Public Meeting for the SONGS Steam Generator Replacement Project Draft EIR was included in the mailing list for the CEQA process. The comment also provides the web site links to information regarding existing potential terrorist threats to SONGS. Terrorism and radioactive waste storage and handling are issues that are part of the baseline conditions of SONGS, and the baseline has been addressed throughout the Draft EIR. Please refer to Section A.4.5, SONGS Security, and Section D.12.1, Environmental Setting for the Proposed Project, Facility Security and Terrorism Issues and Spent Fuel Risk Baseline. The Proposed Project would not cause any significant change to the existing baseline conditions related to security or waste storage and handling and, thus, would not have any significant impacts. Please see also Master Response MR-1 (Baseline).

Comment Set 3
Russell D. Hoffman

San Onofre EIR Project

From: Russell D. Hoffman [rhoffman@animatedsoftware.com]
Sent: Monday, April 25, 2005 6:59 PM
To: Andrew Barnsdale, SONGS/ CPUC
Subject: Why we should shut San Onofre now; unpublished letters to NC Times, NY Times

To: Andrew Barnsdale, SONGS/ CPUC
Aspen Environmental Group
235 Montgomery Street Ste 935
San Francisco, CA 94104

Mr. Barnsdale,

Included below is the first of two submissions which comprise comments about San Onofre and related nuclear issues.

Please include these comments as a submission from a concerned citizen and make them available to the public and to the commissioners. Thank you in advance.

Russell Hoffman
Concerned Citizen
POB 1936
Carlsbad, CA 92018

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From: Russell D. Hoffman, Concerned Citizen; Date: April 18th, 2005

(1) List of problems at San Onofre Nuclear Waste Generating Station since 2001
(2) This letter was censored by the North County Times
(3) ...And this one was censored by the New York Times
(4) Contact information for the author of this newsletter

==========
(1) List of problems at San Onofre Nuclear Waste Generating Station since 2001
==========

Below is a list I have compiled of problems that have occurred at San Onofre over the past few years, with some related data. Despite anything some ivory-tower dreamer might claim, or anything some pro-nuker who has made a living off of other people's misery might say, nuclear power IS a crime against humanity -- nothing less.

The spent fuel at San Onofre is pushing -- or perhaps has already passed -- 4,000,000 pounds. One gram of that would be enough for a dandy "dirty bomb". Around the country, there are 80,000 tons of used reactors cores, with NO PLACE TO PUT THEM. Yucca Mountain is a boondoggle, sharply opposed by people in Nevada and along the transportation routes. This high level radioactive waste is EXTREMELY deadly, can catch fire spontaneously, and is kept OUTSIDE the containment domes at each reactor. If there is an accident, act of nature, or terrorist attack, it will cost society trillions of dollars and tens of thousands, if not hundreds of thousands, of lives.

3-1

Comment Set 3, cont.
Russell D. Hoffman

Every part of San Onofre is aging rapidly. There is no reason to believe SCE's estimate that the steam generator upgrade will save $1 billion dollars for their customers. I'm sure there are enormous accounting tricks to come up with any such figure and it is utter garbage. They won't show us the figures, of course, just their summation. In reality, SCE simply wants to keep the nuclear facility open at ANY cost, in the expectation that future generations of nuclear reactors will be more profitable for them -- in other words, to simply keep the SITE LICENSES GOING because Geo. Bush & Company has promised BILLIONS AND BILLIONS to restart America's nuclear program -- and SCE wants a BIG piece of that pie! 3-1

Every day we keep the facility open and refuse to switch to renewable energy solutions we are incurring an additional debt to society which future generations will curse us for. Steam generator leaks send poisonous "primary coolant" at 2200 PSI into the secondary coolant loop which is at a much lower pressure. From there, the radiation is released in dribs and drabs directly into the environment, as that coolant loop's chemical broth is changed over time. So this isn't just a matter of money or politics -- nuclear power releases deadly radiation all day, every day.

Sincerely,

Russell Hoffman
Concerned Citizen
Carlsbad, CA

--

From: "Russell D. Hoffman" <rhoffman@animatedsoftware.com>
Subject: UPDATED: San Onofre Incidents, Accidents, and news, 2001-current (April, 2005) (version 4)

SCE is the second-largest investor-owned electric utility, and subsidiary of Edison International.

According to the IAEA, the "Annual Time On Line" for Unit 2 was:

2000: 89%
2001: 97.47%
2002: 86.96%
2003: 98.98%
2004: 82.68%

Since beginning operation in 1982, Unit 2 has had 7 years with below 70% ATOL (through 2004, and not including 1982), and 2 more years with identical 70.74% ATOLs.

The ATOL for Unit 3 during the same period was:

2000: 100%
2001: 59.02%
2002: 98.84%
2003: 88.37%
2004: 72.22%

2

Comment Set 3, cont.
Russell D. Hoffman

Since beginning operation in 1983, Unit 3 has had 3 years below 60% ATOL (including 1984 and 1985, the first two years of what was supposed to be full operation), 4 below 70%, and 10 years below 80%.

3-1

February 3, 2001:

Just 12 hours after going back "into service" after repairs, Unit 3 was shut down because of "a fire in an electrical switching room". A 20-year-old circuit breaker "failed to close, creating a 4000-volt arc and fire that cut power to coolant control systems, drowned emergency switching valves and shut down emergency oil pumps, destroying the [turbine] shaft. Currently, 150 identical breakers remain in service at the plant."

Here's the lead paragraph from an "early" SD U-T report. At this point one assumes they hadn't yet realized the turbine shaft was bent, so their estimate of the repair time is wildly optimistic:

February 6, 2001:

"A small fire last weekend that triggered the shutdown of one of two reactors at the nuclear power plant in San Onofre will keep the reactor shut down for several weeks, a plant spokesman said."

This was no "small fire' and required professional help from the San Clemente Fire Department to put out (there was an argument about how to put it out, and the SCFD finally won).

There's a special name for a turbine shaft that runs off it's clamps and bearings and whatnot that's holding it, and gallops across the land, sort of like a steamroller gone mad. That almost happened at San Onofre. I believe one of the turbines would roll towards the control room area, and the other would head towards the puny little tsunami wall. but I'm not sure which turns which way.

May 30th. 2001:

Ray Golden, spokesperson for San Onofre Nuclear (Waste) Generating Station, accuses the opposition of being "completely misinformed and they don't understand the laws of physics". That very day, San Onofre drops an 80,000 lb load (a crane) when a strap breaks. This leads to a reported $5,000,000 expense in lift training, strap replacement, etc. etc.. The same month the crane incident is reported (June, 2001), the EPA approves a power up-rate for San Onofre Units 2 and 3.

June 6, 2001:

Workers overfill a 300-gallon steel bin with hydrazine, a toxic chemical used to purify water in the plant's cooling systems, spilling about 20 gallons. (SD U-T)

June 26, 2001:

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Comment Set 3, cont.
Russell D. Hoffman

Flames and smoke shoot suddenly skyward, pieces of silvery material were fluttering through the air and drifting toward the freeway. Glass falls on the nearby railroad tracks and on the freeway. When the fireball occurred, traffic began speeding up. "Everybody sort of saw it and thought, 'Oh my God, have we just been irradiated or what?' " (SD U-T) 3-1

In fact, the explosion was a transformer in the switchyard, which is also old and poorly maintained, just like the rest of the plant. it was one of 54 similar "potential transformers" which "step down" the voltage to 115 for "sampling". Electricity normally goes out the transmission lines which cross I-5 (and thus are targets for terrorists!) at 238,000 volts.

In 1994 the same thing happened. "Plant workers discovered that corrosion caused by ocean air rusted the transformer's carbon-steel casing, allowing water to enter and contaminate the insulation oil." After the 1994 incident, inspections led to 4 transformers being replaced, and 3 being repaired.

September 11th, 2001:

San Onofre and the nation's 102 other nuclear power plants are NOT shut down during the attack that day, despite planes on the loose being smashed into multiple buildings.

September 26th, 2001:

On the front page of the NC Times, Ray Golden, spokesperson for San Onofre Nuclear (Waste) Generating Station, says he, "had always been taught that we were designed specifically for large plane crashes...That was incorrect." In another paper, he is reported to have said, "The plant was never designed for the impact from a commercial airplane."

September 26th, 2001:

Breck Henderson of the NRC is quoted saying activists aren't facing reality. He claims the plants are safe against tsunamis, earthquakes, tornados and "other natural or man-made disasters". (NC Times)

Letter to NC Times following shutdown October 2001 "for repairs":

Date: October 13th, 2001

Subject: San Onofre nuclear reactor, Unit II, shut down for approx. 20 days for repairs; x-rays should be done for circular cracks in the reactor vessel

By: Russell D. Hoffman

To The Editor:

Yesterday it was reported that San Onofre Nuclear (Waste) Generating

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Comment Set 3, cont.
Russell D. Hoffman

Station's Unit II reactor has been shut down for repairs lasting about three weeks.

3-1

Last August, San Onofre's operators, Southern California Edison, refused to shut their two operational reactors down in order to do x-rays of their reactor vessels for circular cracks around the approximately 100 nozzles which enter each vessel, choosing to wait, instead, until the regular repair schedule dictated a shutdown. Circular cracks have been identified as a potentially catastrophic, inherent design flaw in Pressurized Water Reactors. The problem has been found in French and Japanese PWRs, and last spring, in PWRs in two out of three reactors on the Oconee (South Carolina) generating station.

San Onofre's reactors are about 20% larger than the Oconee reactors (more heat, more liquid, more vibration, etc.).

I have previously described the circular cracking problem in detail in several essays and letters to the editor which I posted online here: http://www.animatedsoftware.com/environm/onofre/nct2001h.htm

Now that the reactor is shut anyway, is San Onofre doing the x-rays? My guess is no, because I believe if they were, it would have been reported.

The decision not to shut the reactors down in August for an x-ray inspection was yet another flagrant violation of the spirit of safety which they claim to have at San Onofre. To not shut them down following the September 11th attacks is even crazier.

But in any event, if they don't x-ray the welds on the Unit II reactor vessel while the reactor is shut down right now anyway, it's definitely nothing less than criminal negligence.

Sincerely,

Russell D. Hoffman
Concerned Citizen
Carlsbad, CA

October 24th, 2001:

"...mock attack teams staged four assaults on the plant, and three were repelled. During the final drill, the attackers were closing in on a target when the exercise was suddenly called off. It is far from certain that plant managers have taken the necessary steps to ensure that a real attack would be less successful." (SD U-T)

Christmas Day, 2001:

A Cessna 172 crashes into the ocean just south of San Onofre Nuclear Generating Station. First reported to have crashed 3 miles south of the reactor and 1/2 mile out to sea, in fact it was probably less than 1/4 mile way.

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Comment Set 3, cont.
Russell D. Hoffman

January 8th, 2002:

San Juan Capistrano (CA) police arrest a man who had threatened to shoot up the San Onofre Nuclear Power Station and his former coworkers etc. at the plant. 3-1

He had an arsenal of almost 300 weapons, including illegal assault rifles, 5,000 rounds of ammunition, an antitank rocket launcher, four live hand grenades, tear gas, survivalist material, etc. etc..

February 27, 2002:

Unit 3 goes offline after a backup connection trips. One of the main electrical connections had been out of service for a week for "maintenance and repairs to key equipment" when the backup tripped. To prevent an uncontrollable blackout in the San Diego area, power was cut to over 200,000 SDG&E customers.

June 21-27, 2002:

"Five families of San Onofre workers who have died of rare forms of cancer have sued SCE for failing to disclose radiation leaks at the plant." About this time, the U.S. Government begins distributing Iodine (KI) pills within a pitiful 10-mile radius around the plant." (OC Weekly)

July 4, 2002:

Unit 2 is returned to service, concluding a 43-day "routine" shutdown for "refueling and maintenance." Operators had intended to start several days earlier, but a malfunction of steam bypass valves automatically shut the reactor down shortly after operators had started it. During the outage, workers repaired 170 tubes and plugged an additional 150 "fewer than they expected". Edison had hired 1,400 contract workers to supplement the 1,800 regular workers at the plant. (SD U-T)

September 27, 2002:

Its reported in World Net Daily that an airplane flying a standard route (known as "Victor 23") can fly DIRECTLY over San Onofre at about 17,000 feet. Jets on "V23" could descend at well over 5,000 feet per minute in a "quick but normal descent" -- much faster if deliberately sent into a nosedive. Every jet departing San Diego on V23 is, in fact, heading for San Onofre.

V25 also runs very close, about 15 miles offshore. A jet traveling at 600 miles per hour covers 15 miles in less than two minutes.

February, 2003:

Plans to haul away Unit 1's 900-ton reactor pressure vessel ("as heavy as

Comment Set 3, cont.
Russell D. Hoffman

two fully loaded Boeing 747s", as one article put it) get so close that a 192-wheel tractor-trailer is expected to haul it away to a barge, which would then transport the reactor about 20,000 miles, including around Cape Horn, to Barnwell County, South Carolina. Cape Horn, the most deadly passage on Earth, is referred to as "the tip of South America" in one AP report, rather than being named explicitly. Rail shipment and the Panama Canal had both already been eliminated, the former because it would "disrupt regular shipping" and the latter because PC officials found it PC to "not accept" the cargo. They apparently have a "150 ton limit on radioactive cargo," perhaps not understanding that it's Curie content that matters, not raw weight. In this case, both (the utility says it's equal to one dental x-ray per hour if you are right next to it). Travel the long way around the globe has still not been ruled out as yet another alternative, but leaving it sit on the beach seems to be the actual plan. 3-1

May, 2003:

Don May, the president of California Earth Corp, points out that there is a major fault line about two miles away from San Onofre that is "overdue for an earthquake." Mark Massara of the Sierra Club's coastal program describes San Onofre as: "an unequivocal environmental and economic disaster with no redeeming features whatsoever." It's reported in local media that several former employees of the plant who have developed cancer have sued plant owner Southern California Edison and its suppliers (such as Bechtel) for exposure to radiation.

September 26 - October 2nd, 2003:

San Onofre Nuclear Generating Station ranked THIRD among the U.S. facilities "most likely to suffer a meltdown" according to the Union of Concerned Scientists. The risk is in part due to design defects in the sump pump system, according to the group. There is potential for debris to clog the screen on the containment-vessel sump. Such a clog could prevent water from being pumped through the reactor core, causing the reactor's fuel rods to overheat and melt down. On August 1st, 2003 the utility promised to have workers trained by November 30th, 2003 to clean the drains. Scott Burnell, public affairs officer for the Nuclear Regulatory Commission (NRC), describes the containment sump-pump issue "a credible one". (OC Weekly)

December 31st, 2003:

SCE's favorable Incremental Cost Incentive Pricing (ICIP) structure ends (a "generation incentive mechanism").

January 29, 2004:

Reactor (Unit ?) leaks 144 gallons per day for "two or three days"; leak described as "tiny":

The leak was in a 2-inch-diameter steel pipe that was part of a system of pipes that "purifies and recycles" water. The "pinhole" leak was to have

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Comment Set 3, cont.
Russell D. Hoffman

been repaired and the reactor brought on line that weekend, and fully operational by the next week.

The reactor spokesperson said the reactor was shut down at 8 p.m. Saturday, two or three days after operators first saw the leak.

Note that 3 days X 144 gallons per day = almost 500 gallons of liquid! .That's no small leak!

3-1

March 31st, 2004:

NC Times: "Two failed water temperature sensors have forced operators to shut down San Onofre's Unit 2 reactor before it could reach full power after a 45-day refueling and maintenance outage, a plant spokesman said Wednesday."

Some facts about San Onofre from that article:

Each steam generator is 66 feet tall, 25 feet in diameter, weighs 750 tons and contains 9,350 metal tubes.

All day every day, 560-degree reactor coolant is pumped through the tubes under 2,250 pounds of pressure per square inch.

San Onofre's steam generators were designed to last 40 years. However, inspectors began detecting cracks in the thin coolant tubes only 10 years after units 2 and 3 came into service in 1983 and 1984.

Edison had to plug 1,899 of Unit 2's tubes and another 534 have been repaired by inserting protective metal sleeves. All told, 10 percent of Unit 2's steam generator tubes are out of service.

Unit 3 has a total of 1,227 ---- or 6.5 percent ---- of its tubes plugged.

April 3rd, 2004:

"Incident" at SONWGS Unit II (see below)

Monday, April 12, 2004

A short circuit at the San Onofre Nuclear Generation station Saturday shut down the plant's Unit 2 reactor just as it was about to reach full power after a "routine 45-day refueling outage" (NC Times).

Routine? 45 days? Not either!

"Saturday's emergency shutdown was the second since Edison finished a biannual refueling process that was supposed to last only 45 days. The refueling outage was scheduled to last until Feb. 25, but operators detected two faulty coolant temperature sensors that forced a shutdown." (NC Times)

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Comment Set 3, cont.
Russell D. Hoffman

November. 19, 2004:

From an NC Times report Nov. 23, 2004: An aluminum plate called a "deionization plate" fell off due to unexpected amounts of vibration from the nearby turbine shaft (which rotates at 1,800 rpm), caused Unit II to shut down at 8:07 PM Friday (Nov. 19th, 2004). 3-1

Unit II was running "without incident" since April 4th, 2004. Several of these aluminum plate had just been installed during the refueling outage.

Unit III was out of service at the time for refueling, so there was ZERO power being generated at the plant during the outage.

December 2, 2004:

At 2200 PSI, there is no such thing as a "tiny" crack: But here's a typical report, anyway:

Unit 3 to remain shut down through mid-January after tiny cracks are discovered in two of its water heaters.

Unit 3 was off line since Sept. 26th, 2004 for a 55-day refueling when microscopic cracks were found in water heater sleeves attached to the pressurizers. The 30 heaters "regulate the nuclear reactor's coolant to ensure the water inside the reactor's coil does not boil."

December 26th, 2004:

Tsunami devastates Indonesia, India, Sri Lanka, Thailand, Sumatra and other countries. Waves more than 50 feet high are reported to crash into the shores. 300,000 people killed. San Onofre claims their 30 foot (possibly 35 foot) sea wall is adequate to contain all possible tsunamis. Tsunamis caused by underwater earth slides have reached 1,800 feet!

December 29th, 2004:

Tornado touches down 50 miles from San Onofre. The plant is not properly protected against tornado strikes. Numerous vital portions of the plant are vulnerable to this and asteroid strikes as well, not to mention terrorists with Rocket-Propelled Grenades (RPGs).

February 3rd, 2005:

Unit 2 shut itself off for another electrical problem -- this time a "digital fault recorder" tripped. SCE could not decide if the $50,000 device was working properly or not, so they replaced it. There are three such devices on site. (SD U-T)

February 7, 2005:

Comment Set 3, cont.
Russell D. Hoffman

According to AP, "The San Onofre Nuclear Generating Station could be forced to shut down as soon as 2009 unless regulators decide that energy customers should pay for $829 million in repairs." 3-1

February 16, 2005:

"For the third time in three months, a reactor at the San Onofre Nuclear Generating Station has shut down." (Unit 2)

This shutdown was initiated due to a "faulty water valve". The valve was 18 inches in diameter and original equipment (1982). It fed "non-radiated" water to various pumps for cooling. There are many valves like it (and just as old) at SONWGS. In July, 1997 another valve's failure to open properly during "startup testing" caused Unit 3 to remain shut down at least 5 days longer than originally planned. The "identical valve" in Unit 2 was tested and determined to ALSO need "repairs". My guess is that "repair" really means "replace".

March 10, 2005:

Environmentalists object to the proposed renewal of a state permit that allows Southern California Edison to use 2.4 billion gallons of seawater each day to cool the San Onofre nuclear power plant. (SD U-T)

From an ex-SONWGS worker's email to me:

Another event that could have been prevented was reported to the NRC by LER (I was the author) when a SONGS technician closed a breaker on an emergency bus, causing a direct ground through the switch yard. The ground caused the breaker supplying power to the emergency bus to open and resulted in a loss of power to the shutdown cooling pumps. The emergency diesel generators started but could not power the bus because the control power to the inadvertently closed breaker had been removed. Therefore, [the] breaker would not open (clearing the bus) during the emergency diesel sequencing. The reactor, shut down for refueling, was without cooling for a few minutes before the operators could align another pump. This event occurred because the technician did not fully understand the operation of the break he was sent to repair. Present at the time were the System Engineer and the Operations Supervisor and several other "lookers." I thought that it was significant that none of the people present realized the consequences of the technician's plans. Nor did any of them halt the work because they were not sure what would happen. Also, it was unrecognized by those planning the work that the temporary ground in the switch yard would prevent the emergency diesel generators from performing their intended safety function.

In another email to me, the same ex-San Onofre employee (who still believes in the dream of nuclear power, by the way), talking about a different LER (Licensee Event Report), stated:

"I believe the report contained statements that were designed to deliberately deceive the NRC. Two days after I raised that concern with the NSC [Nuclear Safety Concerns] office, I was reassigned to other

Comment Set 3, cont.
Russell D. Hoffman

projects . . . The work environment became so hostile, I retired in August 2003."

3-1

UNIT 1 was a failure, too:

And let's not let them forget about how things went with Unit 1, which was a loosing proposition from DAY ONE and from which we now have enormous piles of deadly "spent fuel" radioactive reactor cores. Here's an actual quote from a scholarly report available online:

REACTORS;SEMIMETALS;SHUTDOWNS;THERMAL REACTORS;VAPOR GENERATORS;WATER COOLED REACTORS;WATER MODERATED REACTORS
Description/
Abstract Few nuclear reactors have been shut down for periods on the order of several years - and then restarted. Those that have experienced this type of history are sources of a great deal of information concerning reactivity changes and in-core power redistributions due to nuclide decay. This paper discusses the core reactivity changes due to this nuclide decay and presents actual data illustrating the net effect of these changes on the critical boron concentration (CBC) rundown curve and the in-core power distribution at the San Onofre Nuclear Generating Station Unit 1 (SONGS-1).

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(2) This letter was censored by the North County Times:
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To: "Editor, NC Times" <opinion@nctimes.com>
Subject: 20% is not so hard to find...
Cc: "Gig Conaughton" <gconaughton@nctimes.com>, "Mary Rowe" <mrowe@nctimes.com>, "Phil Diehl" <pdiehl@nctimes.com>, "Erin Walsh" <ewalsh@nctimes.com>, "Paul Sisson" <psisson@nctimes.com>

April 8th, 2005

To The Editor,

Today's article ("Report Concerns Nuclear Activists") ended with an unattributed comment stating that it would be difficult to replace San Onofre's energy. SCE claims "SONWGS" delivers 20% of our local electricity, but one has to factor in numerous prolonged outages. And you should also factor in the costs of evacuations, meltdowns, subsequent permanent loss of real estate, and hundreds of thousands of deaths. What's THAT going to cost?

Our state government believes we can cut our usage by 20% -- they have offered us rebates to do it. So why can't we?

In one 14-month period recently, California added 4,000 megawatts of new generating capacity -- enough to replace all four nukes in the state. Let's do that again, but this time, add renewable energy and CLOSE THE NUKES!

Once a nuclear power plant is shut down, the danger begins to subside. Once the control rods are dropped for the last time, the chance of a meltdown becomes many orders of magnitude less. Once the fuel has

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Comment Set 3, cont.
Russell D. Hoffman

cooled for 5 years or more, the chance of a catastrophic spent fuel fire dramatically decreases.

It's still not safe, but it's safer. Shutting the plants is the only logical thing to do.

Sincerely,

Russell Hoffman
Concerned Citizen
Carlsbad, CA

3-1

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(3) ... And this one was censored by the New York Times:
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To: "Letters Editor" <letters@nytimes.com>
Subject: Another New York Times Op_Ed smacks of pronuclear bias...
Cc: "Nicholas D. Kristof'" <nicholas@nytimes.com>

To The Editor:

Nicholas D. Kristof's Op-Ed piece in your paper was absurd, and his conclusions are illogical. It would have fit perfectly in a Nuclear Energy Institute publication, but not in the New York Times. Real environmentalists should be given a chance to respond!

First of all, wind power, which Kristof scoffs at because the wind doesn't blow all the time (he calls it "one big problem"), works PERFECTLY when used in conjunction with other renewable energy resources, and is the cheapest energy source available today. And what about nuclear power's frequent, sudden, and prolonged outages? Why doesn't he consider THAT "one big problem"? Not to mention the constant threat of industry-wide shutdowns due to as-yet undiscovered (or unadmitted) flaws. Sudden shutdowns of dozens of one type of nuke or another have previously occurred in Japan, France, and elsewhere.

Similarly, his complaint about solar energy's lack of penetration is self-serving, not based on science or economics, but on historic corporate and federal neglect of a useful technology.

Kristof is sure we should rip out all the hydroelectric dams because they might be impacting some salmon runs. Chernobyl affects the wildlife for hundreds -- nay, thousands -- of miles around. Hanford, Washington poisons the Columbia River and way out to sea with its effluent from nuclear bomb and nuke power plant production work done there during the past 50 years. The Yucca Mountain project has been found to be full of fraud, and after 50 years, it is still unworkable, decades away at the earliest, and Nevadans hate it. The nation's spent fuel pools are dangerously overfilled and susceptible to an attack or an accident that would poison more fish in the first day than all the dams in history have ever killed.

There are far more clean energy choices, none of which are good enough for Kristof, but he doesn't go into detail about his complaints regarding ocean thermal energy conversion ("OTEC"), wave power (and all its many variations), tide power, biomass, geothermal, space-based mirrors, the benefits of an intercontinental electrical energy grid, or anything else. He just plugs nukes as the solution to everything.

Comment Set 3, cont.
Russell D. Hoffman

His entire discussion of the dangers of terrorism consists of telling us that "there are also risks from terrorist attacks" after mentioning the Three Mile Island and Chernobyl accidents, but without mentioning Davis-Besse's near-meltdown in 2002 (probably far closer to a catastrophe than TMI was, in reality), San Onofre's 100 million dollar fire in 2001, or any of the other numerous nearly-catastrophic failures at nuclear power plants throughout the world. The truth is, we've been lucky. Nuclear power's image could easily be a lot more soiled than it already is. 3-1

Green energy is possible and necessary. Nuclear power is neither green nor necessary and by choosing nukes we are giving our enemies a powerful weapon to use against us.

Sincerely,

Russell Hoffman
Concerned Citizen
Carlsbad, CA

Below are some URLs this author has created which you can visit to learn more about nuclear power:

How does a nuclear power plant work? (Flash animation based on industry drawings):
http://www.animatedsoftware.com/environm/nukequiz/nukequiz_one/nuke_parts/reactor_parts.swf
or try:
http://www.animatedsoftware.com/environm/nukequiz/nukequiz_one/nuke_parts/reactor_parts.html

POISON FIRE USA: An animated history of all major U.S. nuclear activities:
www.animatedsoftware.com/poifu/poifu.swf
or try:
www.animatedsoftware.com/poifu/poifu.html

ONE BAD DAY AT SAN ONOFRE: Southern California Edison memo, December 2004 about this author (sent to all employees of the plant):
http://animatedsoftware.com/environm/onofre/2005/sce_memo/sce_memo_2004.swf
or try:
http://animatedsoftware.com/environm/onofre/2005/sce_memo/sce_memo_2004.html

Internet Glossary of Nuclear Terminology / "The Demon Hot Atom":
http://www.animatedsoftware.com/hotwords/index.htm

List of every nuclear power plant in America, with history, activist orgs, specs, etc.:
http://www.animatedsoftware.com/environm/no_nukes/nukelist.htm

List of ~300 books and videos about nuclear issues in my collection (donations welcome!):
http://www.animatedsoftware.com/environm/no_nukes/mybooks.htm

SHUT SAN ONOFRE!:
http://www.animatedsoftware.com/environm/onofre/index.htm

Learn about The Effects of Nuclear War here:
http://www.animatedsoftware.com/environm/no_nukes/tenw/nuke_war.htm

For affiliation purposes only: The author of the above web sites and of this letter is also the author of ALL ABOUT PUMPS and co-author of

Comment Set 3, cont.
Russell D. Hoffman

STATISTICS EXPLAINED and THE HEART: THE ENGINE OF LIFE (educational software programs). He is the owner and chief programmer for The Animated Software Company, Carlsbad, CA (www.animatedsoftware.com). Contact information appears below.

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(4) Contact information for Russell Hoffman:
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****
** THE ANIMATED SOFTWARE COMPANY
** Russell D. Hoffman, Owner and Chief Programmer
** P.O. Box 1936, Carlsbad CA 92018-1936
** (800) 551-2726
** (760) 720-7261
** Fax: (760) 720-7394
** Visit the world's most eclectic web site:
** http://www.animatedsoftware.com
****

IF YOU RECEIVED THIS EMAIL IN ERROR AND/OR DO NOT WISH TO RECEIVE ANY MORE EMAILS FROM US FOR ANY REASON, PLEASE CONTACT RUSSELL HOFFMAN AT:

rhoffman@animatedsoftware.com

MailTo:rhoffman@animatedsoftware.com?Subject=Unsubscribe-me-please .
Please be sure that "Unsubscribe-me-please" appears in the subject line.

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Comment Set 3, cont.
Russell D. Hoffman

San Onofre EIR Project

From: Russell D. Hoffman [rhoffman@animatedsoftware.com]
Sent: Monday, April 25, 2005 6:59 PM
To: Andrew Barnsdale, SONGS/ CPUC
Subject: KPBS television show a great promotional piece for SONWGS!

To: Andrew Barnsdale, SONGS/ CPUC
Aspen Environmental Group
235 Montgomery Street Ste 935
San Francisco, CA 94104

Mr. Barnsdale,

Included below is the second of two submissions which comprise comments about San Onofre and related nuclear issues.

Please include these comments as a submission from a concerned citizen and make them available to the public and to the commissioners. Thank you in advance.

Russell Hoffman
Concerned Citizen
POB 1936
Carlsbad, CA 92018

To: fullfocus@kpbs.org, "Editor, NC Times" <opinion@nctimes.com>
cc: nasa-prometheus-peis@nasa.gov, "New Horizons Public Comments" <osspluto@hq.nasa.gov>

April 22nd, 2005 -- Nuclear Activism Newsletter -- Russell Hoffman, Editor.

(1) Comments: on KPBS television "promo" regarding San Onofre's Steam Generator Replacement plan
(2) Letter: to KPBS about their television show
(3) Article: by Dr. Helen Caldicott: Nuclear power is the problem, not a solution
(4) Letter: to the North County Times: Censorship continues unabated at the NC Times
(5) NASA: Promiscuous about Prometheus and other nuclear hotties
(6) Letter: Bruce Gagnon on NASA's multitude of nuclear projects (from the space4peace.org web site)
(7) Contact information for the author of this newsletter

Dear Readers,

Pro-nukers live in a world of delusions, misrepresentations, illogical statements, falsehoods, or, perhaps, even LIES.

3-2

To start with, most of them assume that all background radiation is harmless or maybe even GOOD for you. They think they are spreading little vitamins around. I KID YOU NOT. They really are THAT DELUDED. But what else is "Hormesis" if not the theory that radioactive particles are tiny little sunshine vitamins you can take internally? It's about as logical as describing grenades as being small, healthy versions of atomic bombs.

Pro-nukers generally assume that all cell damage by so-called "low-level"

Comment Set 3, cont.
Russell D. Hoffman

radiation is repairable, which is incorrect. Pro-nukers mistake "no immediate significant danger" for "no danger whatsoever", and "no immediate visible health effects" for "no health effects whatsoever." These also are wildly inaccurate assumptions. 3-2

One pro-nuker proffered many of their various delusions on the local public television station, KPBS, earlier this week. The show seemed like a promotional piece for San Onofre in support of their upcoming steam generator replacement project. The show didn't start with hard facts about the dangers of nuclear power, and what we MIGHT have learned since 9-11 and since Davis-Besse and the Tsunami of last December. Rather, it started by giving the San Onofre plant spokesperson an open mike and a loving photo essay accompaniment.

The steam generator replacement project will probably cost well over $1 billion before it is all said and done. The utility has whittled the APPARENT cost down from around $820 million last summer when it was starting to get occasional front page news (astute citizens have known it was coming much longer) to $680 million as they begin to get more publicity and we come closer to the deadline for a public policy decision.

How did they do that?

Mainly by SEPARATING OUT numerous other repairs they KNOW they will do at the same time! So far, about $140 MILLION has been removed that way in less than a year! By the time the project is actually completed, probably enough will have been hidden away to bring the total HIDDEN COSTS to well over A BILLION DOLLARS. That's on top of the $680 million.

That's a lot of wind turbines that could be bought instead, and there are other savings available from switching away from dangerous, dirty, and inefficient nuclear power to safe and clean replacements. Society would quickly feel a financial benefit, and there are VERY SERIOUS potential consequences from NOT SWITCHING.

The entire issue of steam generator replacement is a distraction at best. Refusing to saddle ratepayers with the cost of the replacement program MIGHT result in the utility shutting the reactors down when they cross some threshold of non-profitability, around 2010 or 2012 (or perhaps much later), or when the NRC determines that a sufficient number of tubes have leaked that the reactor must be shut down, something they are unlikely to do any time soon, since the NRC basically assume that, "if the utility thinks they are making money, what's the problem?" San Onofre's owners can find ways around this steam generator replacement "problem" if it's the only thing blocking their continued operation, and anyone who thinks they can't isn't following along! For example, Bush/Cheney are promising BILLIONS to support nuclear investments at home and abroad. Perhaps SCE will be able to pay for the upgrade through some sort of federal support, in which case, the whole tactic of opposing San Onofre by opposing the steam generator replacement on the grounds of cost will fall through YEARS AFTER IT WILL APPEAR TO HAVE SUCCEEDED.

There's plenty wrong with the idea of replacing San Onofre's steam generators, but if KPBS wanted to pretend to discuss the pros and cons of nuclear power -- as they indicated with their leadoff questions -- the show shouldn't have focused on the steam generator issue, and specifically a cost/benefit analysis which does not account for terrorism, tsunamis, earthquakes, and the many other possible causes of a meltdown.

Why? Because San Onofre IS a meltdown waiting to happen! How long it will

Comment Set 3, cont.
Russell D. Hoffman

wait depends on things like Mother Nature and people like Osama bin Laden -- really predictable things like that. It also depends on factors such as accelerated embrittlement, which the nuclear industry NEVER EXPECTED and which is causing problems across the country and around the world at numerous nuclear power facilities. It's not just the steam generators which will need replacing -- it's lots and lots of other parts, too. About half the SCRAM's at San Onofre are due to aging parts (the other SCRAMs are due to things like kelp in the intake valves, faulty monitoring devices, and "unknown causes" which they sometimes never determine). 3-2

Since the KPBS show's hosts made it clear right from the start that they don't know a cooling tower from a containment dome (literally), they were walked all over by Ray Golden, the spokesliar for San Onofre, and by the "scientist" they had on to promote the supposed safety and economy of nuclear power.

According to the pro-nuker, nuclear waste is safe. The problem is simply that government failed to take back the waste -- bad government -- just make that bad ol' government take back the waste and the waste problem is solved! According to the pro-nuker, replacement power would not be feasible and would take 15 years. It was hard to believe he really believed anything he was saying, since he contradicted himself. One minute nuclear waste is perfectly safe, the next it's so dangerous that a terrorist wouldn't want to try to steal it! He did not mention that a terrorist could cause a catastrophe -- killing 100,000 people or more -- simply by blowing up the spent fuel where it sits. He did not mention that global cancer rates would rise as a result.

Now, let's talk about some of the other guests on the show.

Rochelle Becker of A4NR.org actually said "yes" when asked if we (San Diego) "needed" San Onofre's power today. That's WRONG.

The math just doesn't support the idea that San Onofre's power cannot be replaced virtually overnight if we wish. Even if the "overnight" solutions are temporary until better, more cost-effective solutions evolve, they would still work and they would still be better than keeping San Onofre open. Furthermore, ALL recent blackouts in California, especially the fake energy crises of 2000-2001, have been caused by politics, not over-use of electricity by the lowly citizen who once again is being told by the authorities that they must choose between nuclear power and freezing in the dark.

Several web sites which indicate the facts about the supposed "energy crises" are listed below. There is no benefit to continuing to pretend that we need San Onofre. We don't.

Fortunately, after her initial gaffe, Ms Becker was quite effective in pointing out the dangers of nuclear power.

Alas, the other two guests, while clearly not hopeful about the future of electrical energy from nuclear generators in San Diego county, had deluded themselves into believing that San Onofre's future was sealed simply because SDG&E, a part owner of the plant, wants to divest its 20% share. These guests seemed to feel that this somehow means the facility won't matter to San Diego residents because they are mostly SDG&E customers, not customers of SCE, the primary owner.

But in reality, a MELTDOWN won't look at your utility bill to see if you should be poisoned because you are (or are not) a paying customer. Mark

3

Comment Set 3, cont.
Russell D. Hoffman

both of these guests as fairly confused about the issues.

3-2

Below, I have included a letter I sent to KPBS after watching their show. (I am also sending them this newsletter.)

Also shown below is an article by Dr. Helen Caldicott, who is a Nobel Peace Prize Nominee, a Harvard-educated pediatrician, a nuclear researcher, the author of numerous books which include highly technical details on how radiation damages fetuses and other living things, a professor with honorary degrees from 19 universities, and, among many other honors and responsibilities, the founder of Physicians for Social Responsibility. Dr. Caldicott's article drives home the point that nuclear power is NOT A SOLUTION. The author sent the article to me for publication here, for which I am grateful.

Lastly, earlier this week in Florida, NASA held the first of two hearings about PROMETHEUS, their newest nuclear rocket, and I've included a very informative letter by Bruce Gagnon about NASA's nuclear commitment, which I found on the space4peace.org web site.

In 2006 NASA plans to launch a highly RADIOACTIVE probe to Pluto called New Horizons. The probe will contain approximately 24 pounds of deadly Plutonium-238 -- about 132,500 Curies of the stuff -- a frightful amount. In the event of an accident, this amount will be added to all the other radioactive burdens we each must carry, from fallout from nuclear weapons testing, to nuclear accidents, to daily, approved releases from our local nuclear power plants, to dental, medical, and security x-rays and the many other unnatural causes of our own personal cumulative radioactive burden.

NASA is taking excessive risks, which could release of an Armageddon of poisonous alpha-radiation emitters into our environment -- AGAIN. They claim they have done this successfully for 35 years (before that they did not shield the plutonium AT ALL and at least once, lost the full load (2.1 pounds)). These nuclear rockets and probes are CRIMES AGAINST HUMANITY and NASA's traditional FAILURE RATES are SHOCKINGLY HIGH! NASA will continue to have radioactive dispersals, unless they are banned from using nuclear power sources in space. Otherwise, children will die, and be born deformed, because NASA is STILL spinning wildly out of control. Columbia didn't sober them up one little bit, nor have any of the many other failures since Cassini was successfully launched. (Cassini was the last big nuclear probe, although smaller amounts of nuclear material have been launched on several other "civilian" space probes, and who-knows-what has been launched on secret military missions.)

NASA's many failures in the past few years seem to have only made them more determined to launch more unmanned, high-powered (read: NUCLEAR) probes. They might be saving the lives of NASA astronauts this way -- a good thing, in theory -- but choosing nuclear power sources means THOSE lives will be saved at the expense of OTHER (and vastly more) lives around the globe. That is normally called murder -- or, in this case, it will be genocide.

In some accident scenarios involving collisions with space debris, 100% of the plutonium payload -- 132,000 Curies -- could be released as fine aerosolized particles -- POISON GAS -- during the launch of NEW HORIZONS. NASA claims it won't become a particulate, but their own tests suggest otherwise -- they use statistical averaging to claim the system is safe, not sound engineering. 132,500 Curies of plutonium (or anything) is about 294,000,000,000,000,000 decays per minute.

4

Comment Set 3, cont.
Russell D. Hoffman

Pu-238 has a half-life of 87.75 years, making it an immediate threat of extreme magnitude in the event of an accident or terrorist attack during the launch. The public is not being told much about this risk to their safety. NASA again estimates the odds against an accident using unrealistic assumptions NOT based on their own 50 years of real-world failures. 3-2

Sincerely,

Russell Hoffman
Concerned Citizen
Carlsbad, CA

See this page to realize that California DOES HAVE ENOUGH CAPACITY TO SHUT SAN ONOFRE FOREVER. There are usually nearly 10,000 megawatts of excess capacity in the state. Peak period shortages, usually only during a few summer days, can be made up for quickly with natural gas generators until renewable energy systems come on line to replace them:
http://www.caiso.com/outlook/outlook.html

On 4/20/2005, for example, average capacity was about 34,000 megawatts and average usage was about 25,000 megawatts. BOTH FIGURES CAN BE MADE TO VARY WITH THE WILL OF LARGE CORPORATIONS so by the time you read this, it might be quite different, but on average, there is PLENTY OF EXCESS CAPACITY to shut our nukes down FOR GOOD immediately. So no citizen or report need ever claim anything else is true, because it isn't.

This web page looks at the phony energy crises, including a discussion of peak usage before and during the "crises" which proves there was no crises at all. The figures below are taken from the URL given and are in line with similar figures this author has seen:

FROM: http://gning.org/electricity-2001.html

Highest peak rate of power flow through the Independent System Operator in 2000:
43.8 gigawatts, on August 16.
Highest peak rate of power flow through the ISO in 1999:
45.9 gigawatts, on July 12.

Peak ISO load for the week in January 2001 when rolling blackouts hit:
31.7 gigawatts. Note how much lower this is than the summer peak.
Peak ISO load for the corresponding week of January 2000, when there was no crisis:
32.2 gigawatts.

Here's a look a little further back into California's energy history, by Harvey Wasserman:

From:
http://www.seen.org/pages/media/20010601_power.shtml

"On February 23, 1995, responding to a SoCalEdison petition, FERC blocked a California Public Utilities Commission order that required the utilities to purchase more than 600 megawatts of renewable energy, primarily from wind

5

Comment Set 3, cont.
Russell D. Hoffman

and geothermal sources. Among other things, the FERC said -- with what now seems terrible irony -- "we have grave concerns about the need for this capacity," mostly because the state commission" was relying on 1990 data, which FERC called "stale.""

3-2

Also:
"In 1996 hearings, SoCalEd and PG&E branded their nuclear reactors at San Onofre and Diablo Canyon as too uneconomical to compete in the competitive free market that deregulation would allegedly bring."

Historic data for California Energy Generation (1983 - 2003):
http://www.energy.ca.gov/electricity/electricity_generation.html

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Why would anyone think for even a minute that we cannot shut San Onofre AND Diablo Canyon down IMMEDIATELY? WE CAN AND WE MUST!

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(2) Letter to KPBS about their television show:
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To: fullfocus@kpbs.org
Subject: Why we should shut San Onofre now; unpublished letters to NC Times, NY Times

April 18th, 2005

To Whom It May Concern, KPBS,

Your report today was frightening. To think that reporters "attempting" to present the "full focus" story on San Onofre don't even know a cooling tower from a containment dome (and Tom Fudge didn't know the difference this afternoon, either).

I hope KPBS employees make a serious effort to learn about San Onofre and its deadly nuclear waste. I hope you'll also make the effort to understand that there ARE clean energy alternatives which San Diego could implement in months -- not years, and certainly not "15 years," like that pro-nuclear scientist you had on was alluding to. Admittedly, "up-front" costs would be high to make a bold commitment to, say, wind energy. But long-term costs would be extremely low. San Diego has more than enough energy from renewable sources to be a net energy EXPORTER, not an IMPORTER. Right now we import fossil fuels and uranium fuel rods primarily. We burn the fossil fuels and we stick the uranium fuel rods together so the rods self-irradiate themselves until they are so "hot" with daughter "fission" products that they are of no use to society without expensive, dirty, and dangerous "reprocessing," which is illegal under current federal law.

If we switched to renewable sources of energy, environmental risks would be extremely low, and terrorism threats would be non-existent. Wind and solar power are only two choices which can be implemented quickly and can be very widespread. Renewable energy IS ready. We're just not buying it, because pro-nukers on shows like yours tell us nuclear waste is safe -- even though, in the same show, they have to admit it's so dangerous they don't think a terrorist would survive an attempt to steal it! (But where are all those missing fuel rods, one has to ask? Could they have been made into nuclear bombs???? YES! So-called "spent fuel" contains bomb-making

Comment Set 3, cont.
Russell D. Hoffman

material. Reprocessing spent fuel into reactor fuel ALSO enables the creation of nuclear bombs -- which is one reason we made reprocessing nuclear fuel illegal in America several decades ago.)

3-2

Terrorists, on the other hand, can separate out the bomb elements from spent fuel without anybody's permission. And they can attack our nuclear power plants with those rogue nuclear weapons. Or our cities. But even conventional weapons can be used to cause a MELTDOWN at San Onofre. And an operating reactor is much more susceptible to catastrophic accidents such as those at Three Mile Island or Chernobyl, or like Davis-Besse (Ohio, 2002) almost was. A reactor which has been shut down is much less vulnerable. One that's been shut for many years is even less likely to cause a catastrophic loss of life -- accidents can STILL happen, though. We will never be rid of this problem. But there is no reason to keep making it worse.

Please read the list of problems at San Onofre from just the last few years (shown below) and visit some of my web pages on the subject of nuclear power (given at the end of this email). PLEASE educate yourselves, instead of letting pro-nukers walk all over you.

In addition, you should be aware that Ray Golden, who got SOOOO MUCH air time in the preliminary segment, has a LICENSE TO LIE from the Nuclear Regulatory Commission (NRC). It reads as follows: "Statements made by the public affairs officer of a NRC licensee are not regulated activities. Therefore, the veracity of such statements will not be investigated by the NRC." That description was in a letter from the NRC to this author, about Ray Golden specifically, March 30th, 2002. Since all other judicial bodies defer all technical issues regarding nuclear power to the Nuclear Regulatory Commission, it is a very effective license to lie, which Golden uses regularly (see below).

Please wise up before San Onofre's owners fool the public into extending their license to kill. Every day they release extremely hazardous radioactive products into our environment. So-called "small" leaks in the current steam generators at San Onofre produce deformed babies in our community. Not maybe. Not possibly. It's what they do. It's a scientific, medical, statistical certainty. The power plant owners deny every death they cause. They deny every danger. They hide every problem they possibly can. Not one of your guests mentioned the constant threat from tsunamis. Yet you could do a whole show just on the dangers from the loss of hydrostatic pressure in the intake systems! KPBS needs to catch up with reality BEFORE your reports are all about how much San Onofre is leaking and how far we should run!

Sincerely,

Russell Hoffman
Concerned Citizen
CARLSBAD CA

(Note: Yesterday's newsletter was attached.)

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(3) Article by Dr. Helen Caldicott: Nuclear power is the problem, not a solution:
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The article shown below was published in several papers in the United States as well recently, and the Nuclear Energy Institute (NEI) referred to

Comment Set 3, cont.
Russell D. Hoffman

it as a "diatribe" in a response published in an Ohio paper. The response from NEI was, itself, illogical and was not able to substantiate its claim that the following article is in any way a "diatribe" at all. It is a knowledgeable person's look at a dangerous situation. The NEI is guilty of libel, in addition to their day-to-day crime of genocide. -- rdh

3-2

From: "helen caldicott" <hcaldic@bigpond.com>
To: "'Russell D. Hoffman'" <rhoffman@animatedsoftware.com>
Subject: FW: corrected article

Russell,
Did you see this?
It was published in the Australian last Wednesday
Helen
PS Feel free to circulate

Nuclear power is the problem, not a solution
Helen Caldicott
13apr05

THERE is a huge propaganda push by the nuclear industry to justify nuclear power as a panacea for the reduction of global-warming gases.

At present there are 442 nuclear reactors in operation around the world. If, as the nuclear industry suggests, nuclear power were to replace fossil fuels on a large scale, it would be necessary to build 2000 large, 1000-megawatt reactors. Considering that no new nuclear plant has been ordered in the US since 1978, this proposal is less than practical. Furthermore, even if we decided today to replace all fossil-fuel-generated electricity with nuclear power, there would only be enough economically viable uranium to fuel the reactors for three to four years.

The true economies of the nuclear industry are never fully accounted for. The cost of uranium enrichment is subsidised by the US government. The true cost of the industry's liability in the case of an accident in the US is estimated to be $US560billion ($726billion), but the industry pays only $US9.1billion - 98per cent of the insurance liability is covered by the US federal government. The cost of decommissioning all the existing US nuclear reactors is estimated to be $US33billion. These costs - plus the enormous expense involved in the storage of radioactive waste for a quarter of a million years - are not now included in the economic assessments of nuclear electricity.

It is said that nuclear power is emission-free. The truth is very different.

In the US, where much of the world's uranium is enriched, including Australia's, the enrichment facility at Paducah, Kentucky, requires the electrical output of two 1000-megawatt coal-fired plants, which emit large quantities of carbon dioxide, the gas responsible for 50per cent of global warming.

Also, this enrichment facility and another at Portsmouth, Ohio, release from leaky pipes 93per cent of the chlorofluorocarbon gas emitted yearly in the US. The production and release of CFC gas is now banned internationally by the Montreal Protocol because it is the main culprit

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Comment Set 3, cont.
Russell D. Hoffman

responsible for stratospheric ozone depletion. But CFC is also a global warmer, 10,000 to 20,000 times more potent than carbon dioxide. 3-2

In fact, the nuclear fuel cycle utilises large quantities of fossil fuel at all of its stages - the mining and milling of uranium, the construction of the nuclear reactor and cooling towers, robotic decommissioning of the intensely radioactive reactor at the end of its 20 to 40-year operating lifetime, and transportation and long-term storage of massive quantities of radioactive waste.

Contrary to the nuclear industry's propaganda, nuclear power is therefore not green and it is certainly not clean. Nuclear reactors consistently release millions of curies of radioactive isotopes into the air and water each year. These releases are unregulated because the nuclear industry considers these particular radioactive elements to be biologically inconsequential. This is not so.

These unregulated isotopes include the noble gases krypton, xenon and argon, which are fat-soluble and if inhaled by persons living near a nuclear reactor, are absorbed through the lungs, migrating to the fatty tissues of the body, including the abdominal fat pad and upper thighs, near the reproductive organs. These radioactive elements, which emit high-energy gamma radiation, can mutate the genes in the eggs and sperm and cause genetic disease.

Tritium, another biologically significant gas, which is also routinely emitted from nuclear reactors is a radioactive isotope of hydrogen composed of two neutrons
and one proton with an atomic weight of 3. The chemical symbol for tritium is H3. When one or both of the hydrogen atoms in water is displaced by tritium the water molecule is then called tritiated water. Tritium is a soft energy beta emitter, more mutagenic than gamma radiation, that incorporates directly into the DNA molecule of the gene. Its half life is 12.3 years, giving it a biologically active life of 246 years. It passes readily through the skin, lungs and digestive system and is distributed throughout the body.

The dire subject of massive quantities of radioactive waste accruing at the 442 nuclear reactors across the world is also rarely, if ever, addressed by the nuclear industry. Each typical 1000-megawatt nuclear reactor manufactures 33tonnes of thermally hot, intensely radioactive waste per year.

Already more than 80,000 tonnes of highly radioactive waste sits in cooling pools next to the 103 US nuclear power plants, awaiting transportation to a storage facility yet to be found. This dangerous material will be an attractive target for terrorist sabotage as it travels through 39 states on roads and railway lines for the next 25 years.

But the long-term storage of radioactive waste continues to pose a problem. The US Congress in 1987 chose Yucca Mountain in Nevada, 150km northwest of Las Vegas, as a repository for America's high-level waste. But Yucca Mountain has subsequently been found to be unsuitable for the long-term storage of high-level waste because it is a volcanic mountain made of permeable pumice stone and it is transected by 32 earthquake faults. Last week a congressional committee discovered fabricated data about water infiltration and cask corrosion in Yucca Mountain that had been produced by personnel in the US Geological Survey. These startling revelations, according to most experts, have almost disqualified Yucca Mountain as a waste repository, meaning that the US now has nowhere to

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Comment Set 3, cont.
Russell D. Hoffman

deposit its expanding nuclear waste inventory.

3-2

To make matters worse, a study released last week by the National Academy of Sciences shows that the cooling pools at nuclear reactors, which store 10 to 30 times more radioactive material than that contained in the reactor core, are subject to catastrophic attacks by terrorists, which could unleash an inferno and release massive quantities of deadly radiation -- significantly worse than the radiation released by Chernobyl, according to some scientists.

This vulnerable high-level nuclear waste contained in the cooling pools at 103 nuclear power plants in the US includes hundreds of radioactive elements that have different biological impacts in the human body, the most important being cancer and genetic diseases.

The incubation time for cancer is five to 50 years following exposure to radiation. It is important to note that children, old people and immuno-compromised individuals are many times more sensitive to the malignant effects of radiation than other people.

I will describe four of the most dangerous elements made in nuclear power plants.

Iodine 131, which was released at the nuclear accidents at Sellafield in Britain, Chernobyl in Ukraine and Three Mile Island in the US, is radioactive for only six weeks and it bio-concentrates in leafy vegetables and milk. When it enters the human body via the gut and the lung, it migrates to the thyroid gland in the neck, where it can later induce thyroid cancer. In Belarus more than 2000 children have had their thyroids removed for thyroid cancer, a situation never before recorded in pediatric literature.

Strontium 90 lasts for 600 years. As a calcium analogue, it concentrates in cow and goat milk. It accumulates in the human breast during lactation, and in bone, where it can later induce breast cancer, bone cancer and leukemia.

Cesium 137, which also lasts for 600 years, concentrates in the food chain, particularly meat. On entering the human body, it locates in muscle, where it can induce a malignant muscle cancer called a sarcoma.

Plutonium 239, one of the most dangerous elements known to humans, is so toxic that one-millionth of a gram is carcinogenic. More than 200kg is made annually in each 1000-megawatt nuclear power plant. Plutonium is handled like iron in the body, and is therefore stored in the liver, where it causes liver cancer, and in the bone, where it can induce bone cancer and blood malignancies. On inhalation it causes lung cancer. It also crosses the placenta, where, like the drug thalidomide, it can cause severe congenital deformities. Plutonium has a predisposition for the testicle, where it can cause testicular cancer and induce genetic diseases in future generations. Plutonium lasts for 500,000 years, living on to induce cancer and genetic diseases in future generations of plants, animals and humans.

Plutonium is also the fuel for nuclear weapons -- only 5kg is necessary to make a bomb and each reactor makes more than 200kg per year. Therefore any country with a nuclear power plant can theoretically manufacture 40 bombs a year.

Nuclear power therefore leaves a toxic legacy to all future generations,

10

Comment Set 3, cont.
Russell D. Hoffman

because it produces global warming gases, because it is far more expensive than any other form of electricity generation, and because it can trigger proliferation of nuclear weapons. 3-2

Helen Caldicott is an anti-nuclear campaigner and founder and president of the Nuclear Policy Research Institute, which warns of the danger of nuclear energy.

--
John Loretz
Program Director
International Physicians for the
Prevention of Nuclear War (IPPNW)
727 Massachusetts Ave., 2nd floor
Cambridge, MA 02139
(617) 868-5050, ext. 280
(617) 868-2560 (fax)

http://www.ippnw.org

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(4) Letter: to the North County Times: Censorship continues unabated:
==========

Subject: North County Times CENSORSHIP continues unabated...

April 22nd, 2005

To The Editor:

It is amazing to see the North County Times get all worked up about a pile of dirt in Moab, Utah and yet support, year after year, San Onofre NUCLEAR WASTE GENERATING STATION.

Your horror at the idea that the radioactive mine tailings in Moab might slide into the Colorado river is not wholly inappropriate, but it IS wholly out of balance.

San Onofre is a much bigger threat.

And while it's true, as one of your pro-nuclear readers recently pointed out, that the United States has cut into a salt bed in New Mexico, called it a "Low Level Waste Dump," and furiously started trucking so-called Low Level Radioactive Waste there at the rate of many shipments per week, it is illogical to compare that dump to Yucca Mountain -- as the pro-nuker did, pretending the technical challenges were exactly the same.

Yucca Mountain, if it is ever built (which is very unlikely for scientific reasons as well as political, environmental, environmental racism, and other reasons) will contain waste which is a minimum of a million times worse (10^6), and usually 10-million or 100-million times worse than the waste that is being shipped to the WIPP project in New Mexico. Here, "worse" might be defined as, for example: Capable of forcing the permanent abandonment of any town it passes through if an accident happens on the way to Yucca Mountain. Or perhaps: Capable of being ignited by a terrorist with ONE Rocket-Propelled Grenade and causing significant increases in cancer rates as far as 500 miles downwind, as well as killing hundreds of thousands in the first few hours and days after the accident. Or pragmatically: Capable of causing trillions of dollars in damage.

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Comment Set 3, cont.
Russell D. Hoffman

Nothing being shipped to New Mexico's facility right now is capable of that level of destruction. Since the pro-nuker undoubtedly is aware of this, his comments were presumably meant to mislead the public intentionally. Even though Yucca Mountain may never exist, new highways are being built all around the country just to transport the "high-level" waste away from the reactors, INCLUDING a new highway that goes directly towards Yucca Mountain from San Onofre, without going through Los Angeles, something the nuclear industry wants to avoid like the plague. 3-2

In any event, the pro-nuker whose letter you recently published only came out of the woodwork to libel one of the anti-nukers. This time he picked on activist Shirley Vaine, who became concerned about San Onofre just a few years ago, and bless her for joining the fold. She was, at the time, concerned mostly about Depleted Uranium Poison Gas Munitions, another serious nuclear issue and again, a local one that is not being covered by your paper. Depleted Uranium Munitions (DUM) is a local issue because it poisons our soldiers when they use DUM in Iraq, for instance, and we have a huge military community in the local area.

Many of these soldiers will come back poisoned, like in World War One, but this time, instead of blinding them, we give them FLAMING SEMEN! This is just one of the symptoms of Depleted Uranium Poison Gas Munitions poisoning, along with dozens of other horrific ailments including kidney failure, deformed children, and seizures.

But back to the spent fuel pools. The pro-nuker's comments about Ms Vaine's letter actually had some small amount of substance. Her apparent concern -- about the consequences of the water simply evaporating from the spent fuel pool -- is, by itself, not terribly significant, as published, because someone can, after all, pour more water on the pool, right? Perhaps -- but not if the pool is UNDER a flaming 747 carcass at the time! There are many dangers to leaving spent nuclear reactor cores in our midst, but probably the gravest danger regarding the spent fuel pools and dry storage casks has to do with accidents and terrorist acts which drain the pools QUICKLY or ignite the dry casks as they sit on our coast. For example, a private plane filled with explosives taking off from Oceanside airport would, in under five minutes, be able to cause the largest catastrophe in history by breaking open just ONE dry cask! In fact, just a gram from that dry cask's deadly payload would be enough to force the permanent evacuation of any typical North County city, if it were simply ground up or IGNITED and spread around the town in fine particles too small to clean up effectively -- in other words, a typical DIRTY BOMB would need less than a gram of spent reactor core fuel! But one private plane from Oceanside, filled with explosives and gasoline, could release ten million DIRTY BOMBS into our community -- from ONE dry cask!

Perhaps, the original un-edited version of Ms Vaine's letter referred to a scenario like that, which the pro-nuker did not address AND CANNOT ADDRESS without lying, obfuscating, or misrepresenting the facts.

Of course, no one, pro-nuker or anti-, can do the topic justice within your absurd space limitations.

And you guys aren't telling the public any of this, are you? You don't want to scare them or something, I guess. Well, being afraid of things that might really kill you is perfectly reasonable. The public should be told, so that they will properly factor in these concerns when deciding to support -- or NOT -- the San Onofre steam generator replacement project, or the creation of additional dry storage casks on our coast, or the continued

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Comment Set 3, cont.
Russell D. Hoffman

operation of the reactors at all.

3-2

You have a monopoly in the community -- yours IS North County's "paper of record," for what it's worth. The First Amendment was created so that people who want to tell the public the truth would have a forum to do so within their communities and across the nation, but the North County Times consistently fails to tell the public the whole story, and then you prevent others from doing so on your behalf and in your place, by your pathetic letters policy.

Sincerely,

Russell Hoffman
North County's most censored writer and speaker on nuclear power
Carlsbad CA

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(5) NASA: Promiscuous about Prometheus and other nuclear hotties:
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NASA has all sorts of nuclear assaults up its sleeve. Crossing it's collective fingers with each launch, hoping against hope that they will not irradiate first and foremost Florida with their foul footprint, and then Africa and onward and outward across the planet and across the solar system -- and beyond.

What are they looking for? Signs of life. What will they kill to get there? Life. Your children. Your children's children.

Notice that even though much of the work will undoubtedly be done in California, at JPL and so forth, nevertheless, all three hearings about Prometheus are on the East Coast.

NASA criminals should be stopped! NO NUKES IN SPACE!!

FROM NASA:

NASA's Prometheus program is looking for input on the possibility of developing a space nuclear reactor.

Prometheus Nuclear Systems & Technology, along with Department of Energy's Office of Naval Reactors, is evaluating the possibility of developing a space nuclear reactor to supply future exploration spacecraft with a significant increase in on-board power and spacecraft propulsion capability. Such an increase in power would enable missions to the outer reaches of the solar system and beyond as well as substantially increasing the amount of science per mission.

As a first step, NASA is evaluating whether or not to pursue development of a space nuclear reactor to provide on-board spacecraft power and propulsion capabilities.

"We're seeking input on what sorts of issues we should consider in our evaluation," said Matt Forsbacka, the program manager. "We welcome public comment at each stage of the process." Prometheus Nuclear Systems and Technology will document the evaluation, including alternatives to be

Comment Set 3, cont.
Russell D. Hoffman

considered in a Programmatic Environmental Impact Statement (PEIS) scheduled for publication in 2006.

3-2

NASA plans to hold three public scoping meetings to provide information on the Prometheus PEIS and solicit public comments. Two meetings will be held on Tuesday, April 19, at the Florida Solar Energy Center in Cocoa, Florida, from 1 to 4 p.m. and 6 to 9 p.m EDT. A third meeting will be held in Washington, DC on April 26 from 1 to 4 p.m. EDT at the Hyatt Regency Washington on Capitol Hill.

For more information about Prometheus Nuclear Systems and Technology, the PEIS scoping meetings and information on submitting comments, please visit the Prometheus Home page.

http://www.exploration.nasa.gov/programs/prometheus/

Email comments to NASA about prometheus here:
nasa-prometheus-peis@nasa.gov

Global Network Against Weapons and Nuclear Power in Space:
http://www.space4peace.org/

View a flash animation by Russell Hoffman about nukes in space here:
http://www.animatedsoftware.com/mx/nasa/columbia/index.swf

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(6) Bruce Gagnon on NASA's multitude of nuclear projects (from the space4peace.org web site):
==========

Mr. Kurt Lindstrom
Mission and Systems Management Division
Science Mission Directorate
NASA HQ
Washington DC
osspluto@hq.nasa.gov

Dear Mr. Lindstrom:

I write on behalf of our organization to offer comments about NASA's Draft Environmental Impact Statement on the New Horizons mission to Pluto. We, as we have been since the 1989 launch of Galileo, remain opposed to the launching of nuclear power in space for any purpose.

It is known that when NASA and the Department of Energy (DoE) identify a new mission they have a joint committee that sits down to decide on the kind of power source to be used. It is our understanding that the nuclear industry, who views space as a new market, have made sure to place their operatives right in the middle of this process. So at the very outset this is a rigged game.

It is also known to us that NASA and the DoE have been defunding the research and development of alternative space power concepts in recent years. It is abundantly clear that the nuclear industry intends to ensure that there are not other significant players in the game.

Our concern and opposition is of course centered around the fact that space

Comment Set 3, cont.
Russell D. Hoffman

technology can and does fail. We have seen rocket explosions on launch. We remember the 1996 Russian Mars mission carrying plutonium on-board that failed to achieve proper orbit and fell back to Earth burning up over the mountains of Chile and Bolivia spreading the plutonium over that region. At the time the Boston Globe reported that those governments requested assistance from the U.S. to send in radiological teams to help identify the plutonium contamination belt, but then President Bill Clinton refused to respond. Then we witnessed the Columbia shuttle disaster two years ago and I myself saw NASA operatives on TV dressed in haz-mat suits with Geiger counters taking readings of people in Texas and Louisiana who had come in contact with debris from that accident. Local police forces were heard on National Public Radio warning the public to stay away from Columbia debris and said they were told by NASA that "radioactive" sources were on-board that mission. Just what was the radioactive source on Columbia? 3-2

In addition to space accidents, we are also concerned about the entire nuclear production process and its contamination of workers and communities. You should understand that we have very little confidence in the DoE. Years of contamination at the nuclear labs across the country is a matter of public record. The New Mexican, in Santa Fe, reported in 1996 that "Mishaps in which workers and equipment have been contaminated with radioactive sources are on the rise at Los Alamos National Laboratory." The reason? "Lab officials say the rise in radiation exposure and radioactive mishaps since 1993 has one primary cause: the [NASA] Cassini project and an ongoing effort to build radioactive heat sources." So in fact, even if there is no launch problem the production process is already contaminating and likely killing people.

Now NASA and DoE are saying that they have so many plans for space nuclear power in the coming years that they must ramp up production of plutonium and it appears that DoE will center its operations for these missions at the Idaho National Laboratory. A $230 million proposed facility expansion is now underway. Citizens across Idaho are opposed to this expansion and they fear, with good reason, that they will not get the truth about contamination from the DoE. In a recent article in the Boise Weekly newspaper, Jeremy Maxand, director of the nuclear watchdog group The Snake River Alliance, says the following in regard to this issue: "The DoE is proposing a project that could leave Idahoans breathing plutonium for the next 80 years and they won't tell us what its for. Let's talk about something they can't hide from the public. Plutonium-238 is lethal and difficult to contain. Is this secrecy going to benefit Idahoans given the DoE's well-documented and abysmal track record for worker, community, and environmental safety?"

Maxand goes on to say, "It makes me highly suspicious that on one hand they sell this extremely hazardous process to Idahoans via sleek NASA space batteries, when in fact we've made them for decades using plutonium purchased from Russia's stockpile. Then in the next breath they'll say that the plutonium-238 produced in Idaho will be used for classified national security missions...."

Forgive us for not believing anything our government says. But you all have no credibility. One example is Kodiak island in Alaska. The U.S. government built a rocket launch facility there and promised the citizens of Alaska that it would only be used for civilian launches, never military. But in reality the only missions that have yet been launched have been Missile Defense Agency (MDA) tests. We are convinced that the expansion of nuclear power in space for missions like New Horizons are a Trojan Horse. We are convinced that NASA, DoE and the Pentagon are setting up the nuclear space infrastructure to eventually build nuclear reactors

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Comment Set 3, cont.
Russell D. Hoffman

for warfare in the heavens. New Horizons is an ice breaker.

For all these reasons we must say that the New Horizons mission must be cancelled. NASA and DoE must develop new non-nuclear power sources for space exploration. We will work against the New Horizons mission in the same way we did for Galileo (1989), Ulysses (1990) and Cassini (1997). Project Prometheus, the nuclear rocket, will also be a target of our organization. NASA has been taken over by the military and the nuclear industry.

The time has come for the public to reject plans to move war and nuclear power into space. It is our money that is being wasted on these dangerous projects while schools and libraries close across the nation and people can't afford health care. Jobs are leaving the U.S. by the millions and we are told there is no money to help the people. The public is turning against NASA and their gee-whiz plans for nuclear launches because the public understands the dangers involved. NASA and DoE are out of control and must be restrained by the taxpayers of the nation and the citizens of the world.

In anticipation of a nuclear space accident the U.S. Congress has created the Price-Anderson Act that limits the liability of the U.S. for nuclear contamination clean-up. This law would not have been passed if NASA did not expect a space nuclear accident at some point in the future. We will not wait until the tragedy happens before we speak out. Cancel New Horizons and all other space nuclear missions today before it is too late.

In peace,

Bruce K. Gagnon
Coordinator
Global Network Against Weapons & Nuclear Power in Space
globalnet@mindspring.com

3-2

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(7) Contact information for the author of this newsletter:
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****
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** http://www.animatedsoftware.com
****

IF YOU RECEIVED THIS EMAIL IN ERROR AND/OR DO NOT WISH TO RECEIVE ANY MORE EMAILS FROM US FOR ANY REASON, PLEASE CONTACT RUSSELL HOFFMAN AT:

rhoffman@animatedsoftware.com

MailTo:rhoffman@animatedsoftware.com?Subject=Unsubscribe-me-please .
Please be sure that "Unsubscribe-me-please" appears in the subject line.

Responses to Comment Set 3
Russell D. Hoffman

3-1 This comment presents general concerns, opinions and information generally in regard to potential hazards associated with spent fuel storage, the cost of the Proposed Project, the operating history of the SONGS facility, and the potential for accidents at the project site. The comments do not address the adequacy of the information or analysis provided by the Draft EIR. The comment letter has been included in the Final EIR so the comments may be reviewed by decision-makers when considering the SONGS project.

The hazards of spent fuel storage, the potential for accidents at SONGS, and the general operating history of SONGS are aspects of the environmental baseline that is the context of analysis for project-related impacts in the EIR, as described in Draft EIR Section D.1.2.1. The Proposed Project would not cause any significant change to the existing baseline activity of spent fuel storage and, thus, would not have any significant impacts. Please also see Master Response MR-1 (Baseline). The scope of CEQA does not include project cost or ratepayer benefit in the environmental evaluation of the Proposed Project or alternatives. Project cost and ratepayer benefits are addressed by the CPUC in the General Proceeding (A.04-02-026) on the Proposed Project.

3-2 This comment presents general concerns, opinions and information generally in regard to the cost of the Proposed Project, risks and hazards associated with radioactive material and nuclear power plants, existing energy supplies in California, and projects proposed by NASA. The comments do not address the adequacy of the information or analysis provided by the Draft EIR. The comment letter has been included in the Final EIR so the comments may be reviewed by decision-makers when considering the SONGS project. Please also see Response 3-1.

Comment Set 4
Russell D. Hoffman

San Onofre EIR Project

From: Russell D. Hoffman [rhoffman@animatedsoftware.com]
Sent: Wednesday, April 27, 2005 4:00 PM
To: San Onofre EIR Project
Subject: Re: SONGS DEIR / Steam Generator Replacement Project (follow-up questions)

To: Andrew Barnsdale, CPUC et al
Date: April 27th, 2005
(In response to your email of 4/26/2005)

To Whom It May Concern, SONWGS EIR Project Team,

We were all taught the following as children: "Ignorance is no excuse in the eyes of the law." But your letter of yesterday (April 26th, 2005, and shown below) seems to have forgotten that basic lesson. In it, you claim that the CPUC and the EIR project team are legally allowed to be utterly ignorant of vital facts regarding San Onofre Nuclear Waste Generating Station. 4-1

Even without federal permission to "regulate" nuclear power, you still have a responsibility to UNDERSTAND the dangers of nuclear power. Your letter strongly suggests that just because you aren't allowed to "regulate" it, you don't need to know anything about the dangers.

If you can't regulate the USE of radioactive materials, as you claim, then how can you pretend to be regulating San Onofre's planned steam generator replacement project AT ALL? The Steam Generator Replacement Project specifically allows the USE of radioactive materials and the GENERATION of radioactive waste which will need to be stored, transported and disposed of somehow, and will be a target of terrorists for thousands of years.

You are permitting the creation of a huge environmental problem on a good day, and risking an even larger environmental disaster on a bad day, and yet you CLAIM that you have NO authority to regulate, and no responsibility to even UNDERSTAND the technology. If that is true, then your commission has NO useful role in this decision and your EIS document will be irrelevant, because it will not consider the real issues.

As to your claim that the federal government has "exclusive regulatory authority over radioactive materials," I ask you to show me how such alleged regulatory authority overrides a citizen's right to protect himself or herself from harm? Where does it supercede a state's responsibility to protect its citizens from POISON GAS released during NUCLEAR ACCIDENTS? You are risking the lives of hundreds of thousands of Californians through ineptitude and/or ignorance, willful or otherwise. There is no legal authority for such behavior.

I have looked at various state documents which supposedly cede to the federal government the authority which the CPUC and other California regulatory bodies have so conveniently declared they have yielded. In EVERY CASE I have seen, the wording for such abdication of responsibility SPECIFICALLY SAYS that responsibility shall be given up ONLY so long as the federal government SAFELY regulates the nuclear waste generation or other nuclear project for the citizens of California. Usually, responsibility is given specifically to the ATOMIC ENERGY COMMISSION (AEC).

In reality, the federal government has FAILED to protect the citizens. The AEC was broken up more than 25 years ago for having, among other problems,

1

Comment Set 4, cont.
Russell D. Hoffman

4-1

an inherent conflict of interest within itself (regulation and promotion of nuclear power). More than 65 countries now have made the mistake of using nuclear reactors for military, research, or power (electricity) production (see list, attached). Certainly the 6th largest economy in the world -- California -- can have people who are well versed in radiation issues on the SONWGS Steam Generator Replacement Project EIR team.

The law you cite, if it was ever valid, is certainly utterly obsolete -- "quaint" even, were it not so dangerous. You are swinging a sword in a crowded room with blindfolds on.

Finally, you did not answer my question as to whether representatives from CPUC will be appearing under oath during any of the public hearings regarding San Onofre Nuclear WASTE Generating Station's Steam Generator Replacement Project.

Again, thank you in advance for your response.

Sincerely,

Russell Hoffman
Concerned Citizen
Carlsbad, CA

At 03:42 PM 4/26/2005 -0700, "San Onofre EIR Project"
<sanonofre@aspeneg.com> wrote:
>Mr. Hoffman,
>
>We are sending you a copy of the Draft EIR as requested. Some members of
>the EIR preparation team will be at the public meetings scheduled for May 12
>at 2:00 p.m. and 7:00 p.m. at the San Clemente Community Center. You can
>talk to them at either of those meetings. The first portion of each meeting
>will be an informal workshop during which you can ask questions of the CPUC
>and the EIR preparers on an individual basis.
>
>A large number of people helped prepare the Draft EIR. They are listed in
>Section J.1 of the Draft EIR along with their roles, educational background,
>and years of experience. Only a few of these people will attend the May 12
>public meetings. Those in attendance will include the EIR project manager,
>Jon Davidson, and Steve Radis, who prepared the system and transportation
>safety analysis. Unfortunately, none of the EIR team members in attendance
>will be experts in the biological effects of low-level radiation, since that
>is not a topic addressed in the Draft EIR. The federal government has
>exclusive regulatory authority over radioactive materials and, as a result,
>the State of California has no ability to regulate the storage, use,
>transport, or disposal of radioactive materials.
>
>Please note that an EIR is only an informational document, and that the
>conclusions in the Draft EIR regarding the significance of potential project
>impacts are those of the lead agency, the California Public Utilities
>Commission.
>
>Sincerely,
>
>The SONGS EIR Project Team
>
>
>-----Original Message-----
>From: Russell D. Hoffman [mailto:rhoffman@animatedsoftware.com]
>Sent: Tuesday, April 26, 2005 8:06 AM

Comment Set 4, cont.
Russell D. Hoffman

>To: Andrew Barnsdale, SONGS/ CPUC
>Subject: SONGS DEIR / Steam Generator Replacement Project (corrected
>version)
>
>April 26th, 2005
>
>To: Andrew Barnsdale, SONGS/ CPUC
>Aspen Environmental Group
>235 Montgomery Street Ste 935
>San Francisco, CA 94104
>
>Mr. Barnsdale,
>
>Please send me a copy of the DEIR for the SONGS SGRP ASAP.
>
>I would greatly appreciate receiving the copy in printed ("hardcopy") form,
>in addition to a CD-ROM version.
>
>Also, I would like to schedule a specific time on May 12th, when I can meet
>with an author of the DEIR, and I would like to know the name and technical
>background of the person I will be talking to in advance so I can review
>their qualifications and areas of expertise. I am NOT interested in
>talking to any "expert" who is not well-versed in the biological effects of
>so-called "low level radiation," the economic and technical details of ALL
>renewable energy solutions that were alternatively considered, the
>statistical methods used to determine accident rates in large industrial
>situations, AND the health effects of a widespread dispersal (say, in the
>billion Currie+ range) from a major accident at San Onofre Nuclear WASTE
>Generating Station.
>
>Also, I assume the person I will be able to ask questions of will be one
>with an actual signature on the document. I also assume they will be able
>to speak under oath, on camera, and under risk of penalty for perjury for
>lying.
>
>Thank you in advance and I look forward to hearing from you as to who I
>will be meeting with and when, and to receiving the document formally known
>as the Draft Environmental Impact Report for the Proposed San Onofre
>Nuclear WASTE Generating Station (SONWGS) Steam Generator Replacement
>Project (note that the WASTE is hidden from public view in most
>descriptions).
>
>Sincerely,
>
>Russell Hoffman
>Concerned Citizen
>P.O. Box 1936
>Carlsbad, CA 92018

==========
Partial list of countries with nuclear reactors (includes defunct). Note
that all but 5 are smaller economies than California:
==========

List of Nuclear Reactors Worldwide

From:
http://en.wikipedia.org/wiki/List_of_nuclear_reactors

Comment Set 4, cont.
Russell D. Hoffman

Algeria

Es Salam
Nur

Antarctica

McMurdo Station - PM-3A NNPU "Nukey Poo" US Navy power reactor (operational 1962, shut down 1972, fully dismantled 1979)

Armenia

Metsamor
Armenia-1 (shut down)
Armenia-2

Australia

HIFAR
MOATA

Austria

Austrian Research Centers (http://www.arcs.ac.at) at Seibersdorf - 10 kW ASTRA research reactor (in use 1960-1999)
Atomic Institute of the Austrian Universities (http://www.ati.ac.at) in Vienna - 250 kW TRIGA Mark II research reactor (in use since 1962)

Bangladesh

Dhaka - TRIGA Mark II, Atomic Energy Research Establishment (installed 1986)

Belarus

Sosny, Minsk
IRT research reactor (shut down 1988)
"Pamir" - mobile nuclear power reactor test (shut down 1986)

Belgium

BR-3 - PWR reactor (shut down)
Doel - 4 PWR reactors
Tihange - 3 PWR reactors

Brazil

Angra Nuclear Power Plant, Angra dos Reis, Rio de Janeiro - 2 units, PWR
Belo Horizonte - TRIGA Mark I, University of Minas Gerais (installed 1960)

Bulgaria

Kozlodui
Sofia - IRT research reactor (shut down 1987)

Canada

Power station reactors

Bruce Nuclear Generating Station (Tiverton, Ontario)

4

Comment Set 4, cont.
Russell D. Hoffman

Pickering Nuclear Generating Station (Pickering, Ontario)
Darlington Nuclear Generating Station (Bowmanville, Ontario)
Chalk River Laboratories (Rolphton, Ontario)
Gentilly Nuclear Generating Station (Becancour, Quebec)
Point Lepreau Nuclear Generating Station (Point Lepreau, New Brunswick)

Research reactors

Chalk River Laboratories
MMIR-1 - MAPLE class medical isotope production reactor
MMIR-2 - MAPLE class medical isotope production reactor
NRU - 135 MWth reactor
NRX reactor - (1947-????) The first nuclear reactor in Canada
ZED-2 - zero-energy reactor
ZEEP
Dalhousie University, Halifax, Nova Scotia - SLOWPOKE-2 class reactor
Kanata - SLOWPOKE-2 class reactor (shut down)
L'Ecole Polytechnique, Montreal - SLOWPOKE-2 class reactor
McMaster University - 5 MWth MTR class reactor
Royal Military College, Kingston, Ontario - SLOWPOKE-2 class reactor
Saskatchewan Research Council Saskatoon)
University of Alberta, Edmonton - SLOWPOKE-2 class reactor
University of Toronto - SLOWPOKE-2 class reactor (shut down)

China

This section is incomplete. You can help wikipedia by expanding it.
Daya Bay, Guangdong
Lingao
Qinshan

Colombia

Bogota - TRIGA, Institute of Nuclear Science (installed 1997)

Democratic Republic of the Congo

TRICO I - TRIGA reactor, University of Kinshasa (shut down 1970)
TRICO II - TRIGA reactor, University of Kinshasa

Cuba

This section is incomplete. You can help wikipedia by expanding it.

Czech Republic

Dukovany
Temelin

Denmark

Risø - DR-3 DIDO class reactor (shut down)

Egypt

Inshas Nuclear Research Center
ETTR-1 - 2 MW LWR (supplied by USSR, 1958)
ETTR-2 - 22 MW reactor (supplied by Argentina, 1998)

Estonia

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Comment Set 4, cont.
Russell D. Hoffman

Paldiski - 2 PWR naval training reactors (dismantled)

Finland

Loviisa
Olkiluoto
Helsinki - TRIGA Mark II, State Institute for Technical Research (installed 1962)

France

This section is incomplete. You can help wikipedia by expanding it.
Chooz
Civaux
Fessenheim, the first one in France
Superphoenix, Malville
ICJT list (http://www.icjt.org/npp/lokacija.php?drzava=8)

Germany

Biblis with Biblis-A and Biblis-B
Brokdorf
Brunsbüttel
Emsland
Grafenrheinfeld
Grohnde
Gundremmingen with Gundremmingen-B and Grundremmingen-C, A is defunct
Isar nuclear plant with Isar-1 and Isar-2
Krümmel
Neckarwestheim with Neckarwestheim-1 and Neckarwestheim-2
Obrigheim
Philippsburg with Philippsburg-1 and Philippsburg-2
Unterweser

Now defunct shut down plants include:
Research nuclear plants in Jülich and Karlsruhe
Former GDR nuclear plant in Greifswald (Greifswald-1 to Greifswald-4, and the not finished Greifswald-5 reactor)
Gundremmingen-A
Lingen (research plant?)
Mülheim-Kärlich, build and then shut down because of potential hazards
Niederaichbach (research plant?)
Rheinsberg (research plant?)
Stade, shut down in 2003
Würgassen (research plant?)
Kalkar, never finished
Wyhl, famous nuclear plant that didn't get build because of long-time resistance by the local populace and environmentalists.
IJCT list (http://www.icjt.org/npp/lokacija.php?drzava=9&kontinent=1)

Greece

GRR-1 - 5 MW research reactor at Demokritos National Centre for Scientific Research, Athens

Hungary

Paks - 4 VVER 430 MWe reactors

Comment Set 4, cont.
Russell D. Hoffman

India

Power station reactors

Kaiga Atomic Power Station
Kakrapar Atomic Power Station (KAPS)
Madras Atomic Power Station (MAPS)
Narora Atomic Power Station (NAPS)
Rajasthan Atomic Power Station (RAPS)
Tarapur Atomic Power Station (TAPS)

Research reactors

Kalpakkam - IGCAR
FBTR (Fast Breeder Test Reactor)
KAMINI reactor
500 MWe prototype Fast Breeder Reactor (under construction)

Indonesia

Bandung - TRIGA Mark II (installed 1997)
Yogyakarta - TRIGA Mark II (installed 1979)

Iran

Power station reactors

Bushehr
Bushehr-1 435MWe
Bushehr-2 435MWe

Research reactors

Isfahan, Nuclear Technology Center
MNSR 27 kWt miniature neutron source reactor (MNSR)
Light Water Subcritical Reactor (LWSCR)
Heavy Water Zero Power Reactor (HWZPR)
Graphite Subcritical Reactor (GSCR)
Tehran - TRIGA reactor at Tehran Nuclear Research Center (supplied by USA, 1967)

Iraq

Osiraq / "Tammuz 1" (destroyed by Israeli airstrike, 7 June 1981)

Italy

Pavia - TRIGA Mark II, University of Pavia Mark II (installed 1965)
Rome - TRIGA Mark II, ENEA Cassaccia Research Center (installed 1960)

Israel

Dimona

Jamaica

SLOWPOKE-2 reactor - Kingston, Jamaica

Japan

Comment Set 4, cont.
Russell D. Hoffman

Power station reactors

Fukushima Daiichi (6 BWR reactors)
Fukushima Daini (4 BWR reactors)
Genkai (4 PWR reactors)
Hamaoka (4 BWR + 1 ABWR(Advanced BWR) reactors)
Ikata (3 PWR reactors)
Ikata-1
Ikata-2
Ikata-3
Kashiwazaki Kariwa (5 BWR reactors + 2 ABWR reactors)
Mihama (3 PWR reactors)
Mihama-1
Mihama-2
Mihama-3
Ohi (4 PWR reactors)
Ohi-1
Ohi-2
Ohi-3
Ohi-4
Onagawa (3 BWR reactors)
Onagawa-1
Onagawa-2
Onagawa-3
Sendai (2 PWR reactors)
Sendai-1
Sendai-2
Shika (BWR)
Shika-1
Shimane (2 BWR reactors)
Shimane-1
Shimane-2
Takahama (4 PWR reactors)
Takahama-1
Takahama-2
Takahama-3
Takahama-4
Tokai (GCR, shut down)
Tokai Daini (BWR)
Tomari (2 PWR reactors)
Tomari-1
Tomari-2
Tsuruga
Tsuruga-1 (BWR)
Tsuruga-2 (PWR)

Research reactors

JAERI(Japan Atomic Energy Research Institute) Reactors
Tokai JRR-1(Japan Research Reactor No.1, shut down)
Tokai JRR-2 (shut down)
Tokai JRR-3
Tokai JRR-4
Tokai JPDR (Japan Power Demonstration Reactor, shut down)
Oarai HTTR(High-Temp engineering Test Reactor)
Oarai JMTR(Japan Materials Testing Reactor)
Naka JT-60 fusion reactor
JNC(Japan Nuclear Cycle Development Institute) Reactors

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Comment Set 4, cont.
Russell D. Hoffman

Fugen (ATR(Advanced Thermal Reactor), shut down)
Jyouyou (FBR)
Monju (FBR)

Kazakhstan

Power station reactors

Aktau (Kazakhstan State Corporation for Atomic Power and Industry)
BN-350 135 MWe reactor (shut down 1999)

Research reactors

Alatau, Institute of Nuclear Physics
VVR-K 10MWe reactor
Kurchatov, National Nuclear Center, Semipalatinsk Test Site
IVG-1M 60 MW
RA - zirconium hydride moderated reactor (dismantled)
IGR (Impulse Graphite Reactor) 50 MW

Latvia

Riga, Nuclear Research Center, Salaspils
5 MWe research reactor (shut down)

Libya

Tajura Nuclear Research Center, 10MW research reactor (supplied by USSR)

Lithuania

Ignalina nuclear power plant

Malaysia

Kuala Lumpur - TRIGA Mark II, Malaysian Institute for Nuclear Technology
(installed 1982)

Mexico

Laguna Verde
Mexico City - TRIGA Mark III, National Insatitute for Nuclear Research

Morocco

Rabat - TRIGA (under construction)

Netherlands

Power station reactors

Borssele - 452 MWe PWR
Dodewaard - 55 MWe BWR (shut down 1997)

Research reactors

Delft
Petten

Comment Set 4, cont.
Russell D. Hoffman

North Korea

Power station reactors

Shinpo (Simpo)
North Korea 1 - PWR 1000 MWe
North Korea 2 - PWR 1000 MWe (under construction)

Research reactors

Yongbyon
IRT-2000 - 0.1 MWt heavy-water moderated research reactor (supplied by USSR, 1965)
Yongbyon 1 - 5 MWe Magnox reactor (activated 1987)
Yongbyon 2 - 50 MWe Magnox reactor (under construction)
Taechon
Taechon 1 - 200 MWe reactor (under construction)
Taechon 2 - ? (under construction)

Norway

Research reactors

Kjeller reactors
NORA (activated 1961, shut down 1967)
JEEP I (activated 1951, shut down 1967)
JEEP II (activated 1966)
Halden reactor
HBWR - Halden boiling water reactor (activated 1959)

Pakistan

Chasnupp - 300 MWe PWR
Kanupp - 125 MWe PHWR

Panama

USS Sturgis - floating nuclear power plant for Panama Canal (operating 1966 to 1976)

Philippines

Quezon City - TRIGA reactor, Philippine Atomic Energy Commission (installed 1988)

Puerto Rico

Mayaguez - TRIGA reactor (dismantled)

Romania

Power stations

Cernavoda
Cernavoda-1 PHWR CANDU reactor 700 MW
Cernavoda-2 PHWR CANDU reactor 700 MW (under construction; starts operation in 2006)

Comment Set 4, cont.
Russell D. Hoffman

Research

M gurele, near Bucharest (1957-1998)

Russia

This section is incomplete. You can help wikipedia by expanding it.

Power station reactors

Balakovo
Beloyarsk / Zarechny
Bilibino
Kalinin / Udomlya
Kola / Polyarnye Zori
Kursk
Leningrad / Sosnovy Bor
Novovoronezhskaya
Seversk / Tomsk
Smolensk
Volgodonsk / Rostov

Research reactors

(There are approximately 109 research reactors in Russia. [1]
(http://www.atomsafe.ru/GAN_1_00.htm))
T-15 fusion reactor at Kurchatov Institute

Slovakia

Jaslovske Bohunice - 4 408 MWe WWER,
Bohunice A-1 - 1 388 MWe WWER (shut down)
Mochovce - 2 388 MWe WWER

Slovenia

Krsko
Ljubljana - TRIGA Mark II, Jozef Stefan Nuclear Institute (supplied 1966 by USA to Yugoslavia)

Spain

Power station reactors

Almaraz
Almaraz-1 - 1032 MWe
Almaraz-2 - 1027 MWe
Ascó
Ascó-1 - 930 MWe
Ascó-2 - 930 MWe
Cofrentes - 994 MWe
José Cabrera, Almonacid de Zorita - 160 MWe
Santa María de Garoña - 460 MWe
Trillo - 1.066 MWe
Vandellòs GCR, Tarragona
Vandellòs-1 (shut down after fire, 1989)
Vandellòs-2 - 992 MWe

Research reactors

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Comment Set 4, cont.
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Argos 10 kW Argonaut reactor - Polytechnic University, Barcelona (shut down 1992)
CORAL-I reactor

South Africa

Power station reactors

Koeberg (near Cape Town)
Koeberg-1 920MWe
Koeberg-2 920MWe

Research reactors

Pelindaba - Pelindaba Nuclear Research Center near Pretoria
Safari-1 20MW swimming pool reactor
Safari-2 (dismantled 1970)

South Korea

Power station reactors

Kori - 4 PWR reactors
Kulchin - 4 PWR reactors
Wolson - 4 PHWR reactors
Yonggwang - 4 PWR reactors

Research reactors

Aerojet General Nucleonics Model 201 Research Reactor
HANARO, MAPLE class reactor
TRIGA General Atomics Mark II (TRIGA-Mark II) Research Reactor

Syria

Miniature neutron source reactor

Sweden

Barsebäck
Forsmark
Oskarshamn
Ringhals

Switzerland

Power station reactors

Beznau 1
Goesgen
Leibstadt
Muehleberg

Research reactors

Lucens (shut down 1969)

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Comment Set 4, cont.
Russell D. Hoffman

Taiwan

Power station reactors

Chin Shan - 2 BWR reactors
Kuosheng - 2 BWR reactors
Lungmen (under construction)
Maanshan - 2 PWR reactors

Research reactors

Taipei - TRIGA, Tsing Hua University (installed 1977)

Thailand

Bangkok - TRIGA, Office of Atoms for Peace (installed 1977)
Bangkok - TRIGA MPR 10, Ongkharak Nuclear Research Center (under construction)

Turkey

Istanbul - TRIGA Mark II, Technical University of Istanbul (installed 1979)

Ukraine

Power station reactors

Chernobyl
Chernobyl-1 RBMK-1000 LWGR (shut down 1996)
Chernobyl-2 RBMK-1000 LWGR (shut down 1991)
Chernobyl-3 RBMK-1000 LWGR (shut down 2000)
Chernobyl-4 RBMK-1000 LWGR (exploded in Chernobyl accident 1986)
Khmelnytskyi - 2 WWER reactors
Rivno - 4 WWER reactors
South Ukraine, Konstantinovka - 3 PWR reactors
Zaporizhzhia - 6 WWER reactors

Research reactors

Kiev Institute for Nuclear Research (shut down)
Sebastopol Institute of Nuclear Energy and Industry (shut down)

United Kingdom

Power station reactors

Berkeley (shut down 1989)
Bradwell (shut down 2002)
Calder Hall at Sellafield (shut down 2003)
4 Magnox reactors
Chapelcross
Dounreay
DMTR
Dounreay fast reactor (shut down 1994)
Prototype fast reactor
Dungeness
Hartlepool
Heysham
Hinkley Point, Bridgwater

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Comment Set 4, cont.
Russell D. Hoffman

Hunterston
Oldbury
Sizewell
Torness
Trawsfynydd (shut down 1993)
Winfrith - Dorchester, Dorset
9 reactors, shut down 1990
Wylfa
Wylfa-1
Wylfa-2

Research reactors

Atomic Energy Research Establishment, Harwell
GLEEP (shut down 1990)
BEPO (shut down 1968)
LIDO (shut down 1974)
DIDO (shut down 1990)
PLUTO (shut down 1990)
Billingham - TRIGA Mark I reactor, ICI refinery (installed 1971, shut down 1988)
CONSORT reactor, Imperial College London, Silwood Park campus, Ascot, Berkshire
Dounreay
VULCAN (Rolls-Royce Naval Marine)
PWR2 (Rolls-Royce Naval Marine)
JASON PWR reactor, Greenwich, London (dismantled 1999)
JET fusion reactor, Culham
Neptune - Rolls-Royce Naval Marine, Raynesway, Derby
Sellafield (named Windscale until 1971)
PILE 1 (shut down 1957 after Windscale fire)
PILE 2 (shut down 1957)
WAGR (shut down 1982)
VIPER - Atomic Weapons Establishment, Aldermaston, Berkshire

United States of America

Power Station Reactors

NRC Region One (Northeast)

Beaver Vally, Pennsylvania
Calvert Cliffs, Maryland
Connecticut Yankee, Connecticut (Decommissioned)
FitzPatrick, New York
Ginna, New York
Hope Creek, New Jersey
Indian Point, New York
Limerick, Pennsylvania
Maine Yankee, Maine (Decommissioned)
Millstone, Connecticut
Nine Mile Point, New York
Oyster Creek, New Jersey
Peach Bottom, Pennsylvania
Pilgrim, Massachusetts
Salem, New Jersey
Saxton, Pennsylvania (Decommissioned)
Seabrook, New Hampshire
Shippingport, Pennsylvania
Shoreham, New York (Decommissioned)

Comment Set 4, cont.
Russell D. Hoffman

Susquehanna, Tennessee
Three Mile Island, Pennsylvania
Vermont Yankee, Vermont
Yankee Rowe, Massachusetts (Decommissioned)

NRC Region Two (South)

Bellefonte Nuclear Generating Station, Alabama (Unfinished)
Browns Ferry, Alabama
Brunswick, North Carolina
Catawba, South Carolina
Crystal River 3, Florida
Farley (Joseph M. Farley), Alabama
Hatch (Edwin I. Hatch), Georgia
McGuire, North Carolina
North Anna, Virgina
Oconee, South Carolina
H.B. Robinson, South Carolina
Sequoyah, Tennessee
Shearon Harris, North Carolina
Surry, Virginia
Turkey Point, Florida
Virgil C. Summer (Summer), South Carolina
Vogtle, Georgia
Watts Bar, Tennessee

NRC Region Three (Midwest)

Big Rock Point, Michigan (Decommissioned)
Braidwood, Illinois
Byron, Illinois
Clinton, Illinois
Davis-Besse, Ohio
Donald C. Cook, Michigan
Dresden, Illinois
Duane Arnold, Iowa
Elk River, Minnesota (Decommissioned)
Enrico Fermi, Michigan
Kewaunee, Wisconsin
LaCrosse, Wisconsin (Decommissioned)
LaSalle County, Illinois
Monticello, Minnesota
Palisades, Michigan
Perry, Ohio
Piqua, Ohio (Decommissioned)
Point Beach, Wisconsin
Prairie Island, Minnesota
Quad Cities, Illinois
Zion, Illinois

NRC Region Four (West)

Arkansas Nuclear One, Arkansas
Callaway, Missouri
Columbia, Washington
Comanche, Texas
Cooper, Nebraska
Diablo Canyon, California
Fort Calhoun, Nebraska
Fort Saint Vrain, Colorado (Decommissioned)

Comment Set 4, cont.
Russell D. Hoffman

Grand Gulf, Mississippi
Hallam, Nebraska (Decommissioned)
Hanford N Reactor, Washington (Retired)
Humboldt Bay, California (Decommissioned)
Palo Verde, Arizona
Pathfinder, South Dakota
Rancho Seco, California (Decommissioned)
River Bend, Louisiana
San Onofre, California
South Texas, Texas
Trojan, Rainier, Oregon (Decommissioned)
Vallecitos, California
Waterford, Louisiana
Wolf Creek, Kansas

Plutonium Production Reactors

Hanford Site, Washington
B-Reactor (Pile)
F-Reactor (Pile)
D-Reactor (Pile)
H-Reactor (Pile)
DR-Reactor (Pile)
C-Reactor (Pile)
KE-Reactor (Pile)
KW-Reactor (Pile)
N-Reactor
Savannah River Site, South Carolina
R-Reactor (Heavy Water?)
P-Reactor (Heavy Water?)
L-Reactor (Heavy Water?)
K-Reactor (Heavy Water?)
C-Reactor (Heavy Water?)

Research Reactors

Idaho National Environmental and Engineering Laboratory, Idaho
52 research and test reactors including...
EBR-1
SR-1
Nevada Test Site, Nevada
BREN Tower

Research and Test Reactors Licensed To Operate
Aerotest Operations Inc., San Ramon, CA - TRIGA Mark I
Armed Forces Radiobiological Research Institute, Bethesda, MD - TRIGA Mark I
Cornell University, Ithaca, NY - TRIGA Mark II
Dow Chemical Company, Midland, MI - TRIGA Mark I
General Electric Company, Sunol, CA - "Nuclear Test"
Idaho State University, Pocatello, ID - AGN-201 #103
Kansas State University, Manhattan, KS - TRIGA Mark I
Massachusetts Institute of Technology, Cambridge, MA - HWR Reflected
National Institute of Standards and Technology, Gaithersburg, MD - TRIGA Mark I
North Carolina State University, Raleigh, NC - Pulstar
Ohio State University, Columbus, OH - Pool
Oregon State University, Corvallis, OR - TRIGA Mark II
Penn State University, University Park, PA - TRIGA
Purdue University, West Lafayette, IN - Lockheed
Reed College, Portland, OR - TRIGA Mark I

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Comment Set 4, cont.
Russell D. Hoffman

Rensselaer Polytechnic Institute, Schenectady, NY - Critical Assembly
Rhode Island Atomic Energy Commission, Narrangansett, RI - GE Pool
Texas A&M University, College Station, TX (two reactors) - AGN-201M #106, TRIGA Mark I
University of Arizona, Tucson, AZ - TRIGA Mark I
University of California-Davis, Sacramento, CA - ?
University of California Irvine, Irvine, CA - TRIGA Mark I
University of Florida, Gainesville, FL - Argonaut
University of Maryland, College Park, College Park, MD - TRIGA Mark I
University of Massachusetts, Lowell, MA - ?
University of Michigan, Ann Arbor, MI - Pool
University of Missouri, Columbia, MO - Tank
University of Missouri, Rolla, MO - Pool
University of New Mexico, Albuquerque, NM - AGN-201M $112
University of Texas, Austin, TX - TRIGA Mark II
University of Utah, Salt Lake City, UT - TRIGA Mark I
University of Wisconsin, Madison, WI - TRIGA Mark I
U.S. Geological Survey, Denver, CO - TRIGA Mark I
U.S. Veterans Administration, Omaha, NE - TRIGA Mark I
Washington State University, Pullman, WA - TRIGA Mark I
Worcester Polytechnic Institute, Worcester, MA - GE

Research and Test Reactors Under Decommission Orders or License Amendments. (These research and test reactors are authorized to decontaminate and dismantle their facility to prepare for final survey and license termination.)
CBS Corporation, Waltz Mill, PA
General Atomics, San Diego, CA (two reactors)
Georgia Institute of Technology, Atlanta, GA
Iowa State University, Ames, IA
Manhattan College, Riverdale, NY
National Aeronautics and Space Administration, Sandusky, OH (two reactors)
Saxton Nuclear Experimental Corporation, Saxton, PA (one power reactor)
University of Illinois, Urbana, IL
University of Washington, Seattle, WA
University of Virginia, Charlottesville, VA (two reactors)

Research and Test Reactors With Possession-Only Licenses. (These research and test reactors are not authorized to operate the reactor, only to possess the nuclear material on-hand. They are permanently shut down.)
Cornell University Zero Power Reactor, Ithaca, NY
General Electric Company, Sunol, CA (two research and test reactors, one power reactor)
Nuclear Ship Savannah, James River Reserve Fleet, VA (one power reactor)
State University of New York, Buffalo, NY
This section is a stub. You can help Wikipedia by expanding it (http://en.wikipedia.org/w/index.php?title=List_of_nuclear_reactors&action=edit).

Links

DoE list (http://www.eia.doe.gov/cneaf/nuclear/page/at_a_glance/reactors/nuke1.html)
ICJT list (http://www.icjt.org/npp/lokacija.php?drzava=32)includes the defunct

Uruguay

URR reactor

Uzbekistan

Comment Set 4, cont.
Russell D. Hoffman

Ulugbek, Tashkent
VVER-SM tank reactor (shut down)

Venezuela

RV-1 reactor

Vietnam

Da Lat - TRIGA Mark II (supplied by USA 1963, shut down 1975, reactivated by USSR 1984)

External links

Reactor lists:
ICJT lists of Nuclear Power Plants worldwide (http://www.icjt.org/npp/)
US DoE commercial nuclear reactors page (http://www.eia.doe.gov/cneaf/nuclear/page/nuc_reactors/reactsum.html)
List of Canadian nuclear power stations (http://www.icjt.org/npp/lokacija.php?drzava=4) on the ICJT site

Reactor news items:
CFE Mexico reactor (http://www.cfe.gob.mx/NR/exeres/2955F304-1D53-4A90-B40F-BE1BE30C1110)
[2] (http://www.expatica.com/source/site_article.asp?subchannel_id=1&story_id=12294&name=Netherlands+revisits+the+nuclear+taboo)
Netherlands reactors
Retrieved from "http://en.wikipedia.org/wiki/List_of_nuclear_reactors"

Categories: Incomplete lists | Section stubs | Nuclear technology | Lists | Nuclear power plants

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Responses to Comment Set 4
Russell D. Hoffman

4-1 Draft EIR Section A.4.1, NRC Jurisdiction, and Section A.5, CPUC Jurisdiction, discuss the authority of the NRC and the CPUC over the Proposed Project, and the relevancy of the Draft EIR to identify measures to ensure public safety and/or safe work practices during project activities. Please see also Master Response MR-3 (Jurisdiction).

The risks posed by operation of a pressurized water reactor (PWR), spent fuel handling and storage, and low-level radioactive waste are recognized as part of the baseline conditions at SONGS, which are addressed in several locations throughout the Draft EIR. Please refer to Section D.12.1, Environmental Setting for the Proposed Project, and Master Response MR-1 (Baseline). No significant safety impacts would occur as a result of the Proposed Project.