

50-206
50-361/362

From: stephen dwyer <smd@wdc.net>
To: WND1.WNP2(Chairman)
Date: 6/3/97 4:44pm
Subject: 2.206 Petition Re: SONGS Seismic Hazards

May 28, 1997

Dr. Shirley Jackson, chairman Nuclear Regulatory Commission Washington,=20
D.C. 20555-0001

Re: Emergency Petition for Shutdown of SONGS and Removal of Spent Fuel to=20
Reduce Seismic Hazards and Risks.

Dear Dr. Jackson,

The following paragraph is from an article by Mark Petersen,=20 seismologist, Calif.
Div. of Mines and Geology, published in California=20
Geology, Mar/Apr. 1994, p.42. shortly after the Northridge Quake.

"Preliminary measurements from accelerometers located on the ground (not=20 within
structures) indicate that the peak accelerations were very high,=20 about 180%g at
Tarzana (about 4 miles, 7km, from mainshock), 90%g near=20
Sylmar (9 miles, 15km, from mainshock), and up to 50%g at several other=20 stations (located within 25 miles, 40km, of the mainshock). The strong=20 shaking(>100%g) at
Tarzana persisted for more than 8 seconds, while=20 several other stations had
potentially damaging strong motion exceeding=20 about 10%g for 5 to 10 seconds.
These persistent high values of strong=20 ground-motion most likely contributed to the
extensive damage."

(damage estimates are up to about 20 billion, making Northridge Quake the=20 most
expensive disaster in US history) This new seismic event and=20 information should
have caused SCE & NRC to immediately re-evaluate the=20 situation, but apparently
not much happened to the status quo.

Not only was the San Fernando Valley hard hit, but also several major=20 disasters
occurred across the LA area. Especially amazing was the=20 collapsed freeway bridge (Design Basis=3D50%g) on I-10 at Fairfax in West=
=20

LA, about 20 miles from the mainshock. Another amazing disaster was the=20
250,000 gal. water tank at Northridge Mall. It was lifted 30cm. off the=20 ground,
crashed and burst in elephant foot style, while the adjacent mall=20 was completely
destroyed. So much for fire, quake and rescue=20 preparations. It is hard to imagine
what might happen to a nuclear=20 reactor, or to a SFP or steam generator, were it to
be hit by over 100%g=20 forces and things went airborne! Lets not wait around to find
out. It is=20 possible here, very possible and also highly probable.

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The values for the accelerations and the attenuations in the SONGS seismic report are not in line with these values from Northridge, and perhaps several other recent quakes as well. This small fault that was unmapped, with a M6.7, no surface rupture, and unprecedented accelerations, has caused seismologists to reevaluate many quake assumptions. Magnitude doesn't exactly correlate to acceleration, duration, damage or attenuation. There is a much greater uncertainty, unpredictability and potential for incredible destruction in earthquakes than previously assumed.

The SONGS report uses a DE of 67%g and the assumption of probabilities in the range of very unlikely to exceed 67%g at 5 miles range. Clearly if an unmapped fault can generate 90%g at 9 miles, an even greater event could generate enough to damage the plant at very large distances. A M7.7 is very possible in S. CA and is ten times the magnitude of Northridge. A

M8.7 is possible on sections of the San Andreas and would be 100 times Northridge. The shaking could persist for a minute not just a few seconds. Aftershocks are usually one to two Magnitudes less and could be also very damaging to weakened structures.

The damage could be AT LEAST 50 TIMES Northridge, up to \$1 TRILLION!

We are taking a big enough risk here already. SONGS is one of the very few risks we can reduce, along with lowering water levels at local reservoirs and some retrofitting. We need your help desperately to reduce the risks, the combination of a quake sending every one to live in the streets, and then radiation exposure while in such a destroyed and trapped situation is probably unsurvivable.

Therefore, a complete review of the seismic and mathematical analysis (including special computerized modelling) of the Seismic Hazards at SONGS is way overdue. In fact, the emergency situation that Northridge generated is greater now, 3 years later. SONGS should not be operated while this is being re-evaluated, and immediate preparations for the emergency removal of the spent fuel should be undertaken. Any simple analysis of the risk-reward ratio shows that we are taking way too much risk for so very little gain. It is also wrong to risk so many lives for corporate profits, and to risk national security for a single corporation's profits.

There is no excuse for not doing every seismic analysis known on this and other nuclear plants. These facilities need the best analytical technology available and regular updates as new software and equations etc. become available. Virtually no updating since before Northridge is probably against one or more NRC regulations, and no attempt to retrofit anything at SONGS is also probably a violation. All that has been learned in the last few years is worthless if it is not being put to practical use. Even the headquarters of

SCE in Irvine was retrofitted, as were all sorts of structures in S. CA and worldwide.

The complete collapse of the new superhighway in Kobe, Japan, shows that state of the art may still not be enough. The breaking of welds in steel buildings in the San Fernando Valley is a warning that all sorts of steel welds and fittings are vulnerable. The number of such welds and fittings at SONGS is almost uncountable, and it's therefore unrealistic to believe that they will all be undamaged or broken at forces far below the Design Basis Event of 67%g. The domino effect of multiple breaks in several systems in a near DBE or greater could cause a catastrophe. The injuries sustained, including psychological problems, to vital personnel should also be evaluated. The combination of seismic fear and injury with plant dangers and breakdowns would take courage and strength beyond normal human disaster experience and capability.

Since the license for SONGS has a relatively short time left, SCE's strategy seems obvious. SCE is trying to buy time to pay off the plant and make a few bucks by spin doctoring the Seismic Hazards report, all subsequent seismic allegations, NRC questions and any other challenges to the status quo. No one in S. CA is aware of the tremendous risks being taken. No retrofitting of a single bolt or weld has been done for seismic reasons that I am aware of, for apparently to do so would be an admission of a deficiency that could snowball into further challenges, inspections, retrofittings and costs, if not an early shutdown.

Almost any increase in costs would coincide with the upcoming deregulation and would seriously affect SONGS' ability to compete in such a market. These two curves, costs and revenues, could cross very quickly.

This would further hinder any retrofitting financing, and probably increase spin doctoring and stonewalling by SCE to buy a little more time for an ageing plant.

As deregulation approaches, a campaign to encourage people to switch to non nuclear power could accelerate the decline of profitability and the unlikelyhood of retrofitting. SCE will have to spend more to persuade people to buy nuclear power, money that should be spent to upgrade the plant. The costs of this media battle will not be small change. Increased media attention on SONGS has so far been held in check by special circumstances and connections, but renewed attention could shine a little light on the plant. I don't believe it will stand up well to the light of a new dawn. By noon the heat could be quite intense, and the plant could be history by sundown. But, a media meltdown would be a lot better than a real core meltdown.

Decommissioning should focus on removal of fuels from S. CA first. As I read the timetable for the decommissioning of Unit 1, I was shocked to see that little is planned for another 20 years, and the project would continue for 100 years, including the spent fuel. This is unacceptable and apparently there are no plans for Units 2 & 3 at all. The fuels should be removed asap to NV on a temporary emergency basis,