

Dec. 10, 1996

Dr. Shirley Jackson and
Frank J. Miraglia, Jr., Acting Director
Office Of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington D. C. 20555-0001

Dear Dr. Jackson and Mr. Miraglia,

I have finally received your letter of Nov. 22, 1996 in which Mr. Miraglia denied my request that the SONGS be immediately shut down pending a more thorough review of the seismic risks. I was told that there would be a petition process during which I assumed that I would be able to present information and data. I now assume that the request for a shutdown is separate from the petition process and that is why your denial was issued first. I think that you should have at least let me submit something before this decision was made.

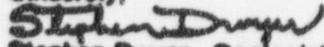
Mr. Miraglia then used some other SCE data to substantiate his denial and hasty conclusions. He stated that there is insufficient evidence to warrant immediate action, but I have not had the chance to submit any evidence yet! He also stated that he will evaluate my allegations, but I have not even had the chance to submit any yet! Even if my request is to be separated into two parts, an emergency part and a lengthier petition process, it should be made clearer to whom and when information is to be submitted.

I have enclosed a brief paper on the "Uncertainties of Seismic Risk Modeling". This is only the beginning of what will be presented. I will also submit an outline of the material to be presented soon.

May I make corrections or additions to the Notice that is being published in the Federal Register? No information was included about this part of the process either.

If these procedural misunderstandings and tactics are typical of your handling of emergency and other requests, I pray they improve before we proceed. If they are indicative of a systematic administrative problem, then not only is S. California in danger, but the rest of the country. Since this is an emergency situation, please call or e-mail to facilitate with these procedural matters. Lets use regular mail for documents.

Sincerely,


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enc. Uncertainty Factors

Uncertainty Factors Affecting Seismic Risk Modelling in So. California

The following list is an outline of the 10 major uncertainties in current seismic risk analysis. This list was taken from a recent paper by M.D. Petersen, et al. (Seismic Hazard Analysis, AEG, 1-20-85). Their conclusion that the entire Los Angeles, Ventura and Orange Counties are high hazard areas. Accelerations of 0.4g (pga), 1.0g (0.3-sec SA), and 0.5g(1-sec SA) can occur nearly everywhere. Higher accelerations occur near all of the known fault zones. Similar figures could be calculated for other areas in S. California, such as San Diego, W. Riverside, San Bernardino and Imperial Co's.

They also conclude that even though these calculations are based on a broad consensus of current scientific opinion, numerous uncertainties exist in assumptions about most of the key parameters. The models are always being updated with each event. This is characteristic of the history of the science. 40 years ago, we didn't even know that the San Andreas Fault had offsets of over 350 miles! Yes, we have come a long way towards understanding the spectacular geology and tectonics of S. California, but there are still a lot of things we need to know to make certain critical decisions on major construction projects, past and present. We need to continually upgrade the calculations because the awareness of the seismic risks is so dramatically increased with each event.

The several disastrous earthquakes we have had in S. California were full of surprises and we were actually very lucky we didn't have greater loss of life. These events are the warnings that we should heed before an even greater catastrophe occurs. We must plan for the mitigation of an event greater than any recently experienced on our local small faults. We must prepare for a great event on the Southern San Andreas Fault. This event could easily be M=8, and will probably be much greater than the San Francisco Quake, M=8+.

There are a lot of things we should do as soon as possible. Some are discussed below.

List Of Seismic Analysis Uncertainties

1. How to quantify slip rates and maximum magnitudes along with their uncertainties for all fault sources.
2. How to incorporate blind thrusts with appropriate weighting.
3. What aseismogenic zone widths to use for various fault zones.
4. Which magnitude distributions are most appropriate for various faults.
5. How to incorporate background seismicity and which "b" value is most appropriate for exponentially distributed earthquakes.
6. Whether to use source zones or simple point sources in modelling background seismicity.
7. Which alternative segmentation models are viable (including alternative cascades models for "A" zones).
8. How to incorporate geodetic data directly in the model.
9. Which attenuation relations are most appropriate and how to model ground motion from large (M > 6) earthquakes.
10. How to resolve the discrepancy between the rate of earthquakes in this and other seismic hazard models and the historic earthquake record (especially in the Transverse Ranges).

The quantity and nature of these uncertainties means that we can continue to expect new surprises with each event. The proliferation of monitoring stations and new computerized modelling has increased the analysis capability and precision, but has done little to improve the accuracy of the results and the value of the "Predictions". In fact, various other non mathematical models for prediction and mitigation have a better track record. The "model" that I would recommend is one that acknowledges how humble and limited our sciences are compared to the vast complexities of the mechanisms of Geology. This means that we should not take risks when we know that we really don't have the knowledge to evaluate them. This "model" has an inherent respect for the tremendous power of earthquakes, and perhaps an inherent wisdom.

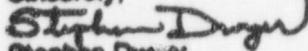
Although the calculations for San Onofre Nuclear Generating Station were updated in 1985,

It is my understanding only a "Probabilistic" calculation was done, based on some simple assumed parameters. It apparently concludes that the old calculations made in an earlier seismology era are still relatively valid. Additional calculations of the true maximum event or a "Deterministic" calculation were not done. Additional parameters, assumptions and various combinations of these were not modeled and run in a Dynamic, Sequential way. New techniques could show better what actually could take place as the quake event unfolds. Not only the structural features, but also the soil, rock, civil engineering, hardware, plumbing, electrical and especially human situations need to be evaluated in a Realistic Scenario Analysis. I don't believe that anything like this has been done. It should be if we are to approach reality and get beyond simplistic mathematical calculations. Also, the risks should not be taken until these more sophisticated dynamic scenarios are evaluated. Therefore, the plant should be temporarily shut down pending the results, and not continue "Status Quo" while we debate the need for further studies. This current situation is neither scientific nor safe. The seismic risks to this plant are the greatest of any currently operating plant in the world.

Not only should the plant be temporarily shut down, but also the waste storage situation should be dealt with as an "Immediate Emergency Hazard". The waste should be prepared for transport out of the S. California Seismic Zone. I believe that several temporary sites are available. Almost anyplace is safer than in a pool at the beach! This facility for storing waste was never designed for the current usages and this is totally unacceptable and a violation of numerous rules, regulations, laws, human rights and basic common sense. The waste should be shipped as soon as possible, to the Nevada Test Site, Palo Verde Plant, or some other site away from dense population centers, water sources and the San Andreas Fault! We need to set the example for other facilities. This operation should be state of the art. If this isn't possible, then it should be shut down permanently.

Millions of people are at risk, the Pacific Ocean is at risk and the future of America is at risk.
This is a crime against Humanity and the Planet!

Sincerely,


Stephen Dwyer
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