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Date: Wed, Oct 30, 2002 3:10 PM
Subject: Comparison Chernobyl and Spent Fuel Pool fire at Diablo

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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

SERVED October 31, 2002

From: San Luis Obispo County (SLO) GREEN Party
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To: Diablo Canyon Independent Safety Committee
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CC: US Nuclear Regulatory Commission (Docket No. 72-26-ISFSI)
ASLBP No. 02-801-01-ISFSI
US Senators Dianne Feinstein and Barbara Boxer
Congresswoman Lois Capps
California State Senator Jack O'Connell
California State Assemblyman Abel Maldonado
California Governor Gray Davis
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Lawrence F. Womack, VP Nuclear Services, Diablo Canyon Power Plant

Conc: I. Your request for documentation of Chernobyl cancer death statistics.
II. Relevance to PG&E's ISFSI application for Diablo Canyon.

Template= SECY-038

SECY-02

Please note: This letter is addressed to the Diablo Canyon Independent Safety Committee in response to a direct request. However, the SLO GREEN Party believes that the information contained in this letter is of the utmost importance to all CC's and urges all to read the following pages with an open mind. Thank you. For your convinience, our letter is attached and "cut and paste".

October 30th, 2002

Dear DCISC members:
In my comments on behalf of the SLO GREEN Party on Oct. 17th, 2002, in Pismo Beach, I compared the consequences of a spent fuel pool fire at the Diablo Canyon Nuclear Power Plant with the accident at Chernobyl. In a 10/2000 finding, the US Nuclear Regulatory Commission (NRC) concludes that the consequences of such a fire would be comparable to a "severe reactor accident". Public officials and scientists have stated that a pool fire could be "potentially worse than a reactor meltdown" [Alvarez: "What about spent fuel", BULLETIN OF ATOMIC SCIENTISTS, Jan. /Febr. 2002, page 46; compare also: THE TRIBUNE, "Greater plant security urged", 10/17/02, page A1]. At the end of my comment, the chair of your committee requested the source of the statistics regarding latent cancer deaths after the Chernobyl accident in 1986. I cited the number of 125,000 from statistics released by the Ukraine Health Ministry in March 1996 and reported by AP on 3-26-96. These numbers were also used by the local chapter of PHYSICIANS FOR SOCIAL RESPONSIBILITY (PSR) in a letter to the LOS ANGELES TIMES on 5-24-96, responding to a commentary by Robert Gale " Ten years after Disaster, some positive results", LA TIMES, 4-26-96.

I. Chernobyl statistics

After extensive further research, the SLO GREEN Party has come to the conclusion that the exact number of human casualties related to Chernobyl will most likely never be known. This is due to several factors: secrecy in the former Soviet Union, political upheaval in the affected areas after the collapse of the USSR and the generic difficulty of relating cancers to a specific source years after radiation release.
However, the following appears to be clear:

a.) the number of 31 deaths, often used by the US media and/or pro-nuclear sources, refers to just the deaths in the immediate aftermath of the explosion.

b.) There has not been an exact assessment of the true extent of the human toll as it relates to latent cancers and/or other Chernobyl related diseases.

c.) The number of 125,000 deaths from the Ukraine Health Ministry in 1996 is

now widely seen as unreliable and as an attempt by the Ukraine government to get sympathy (and money) from the West. Apparently those figures were inflated because they included all deaths (except old age) in the contaminated areas in the Ukraine since 4-86.

d.) Opinions on the accident's total effect continue to vary widely, often depending on whether the source is pro- or anti-nuclear. Here are a few examples:
1.) Viktor Poyarkov, Head of the Ukrainian Radiological Studies Center, 1996: 2,500 deaths.
2.) Warren Christopher, US Secretary of State, 3/19/96: "thousands of deaths".
3.) David R. Marples, University of Alberta, "Chernobyl Ten Years Later-The Facts", 3/21/96: 5, 700 "liquidators" died from 1986 to 1990, and an estimated 1,000 children from thyroid cancer.
4.) Yuri Shcherbak, Ukraine ambassador to the US, 1996: estimated 32,000 deaths in the Ukraine alone, based on a GREENPEACE study of Ukraine death rates before and after the accident.
5.) CNN presents Chernobyl: Legacy of a meltdown, 4/4/96: "Exposure to massive amounts of radiation killed 32 plant workers and firefighters. Thousands more died later from effects of the accident".
6.) Chernousenko, Russian author and general in charge of the clean-up at Chernobyl, accused the Soviet Union of covering up the true figures and estimated in 1991 the death toll to exceed 100,000.

The current PSR website states at www.psr.org/s11/plants.html:
".. the true extent of the human and environmental damage caused by the accidental meltdown of the Chernobyl plant's core is yet to be assessed,....".
Likewise the present website of the Library of Congress at www.ibiblio.org/expo/soviet/exhibit/chernobyl.html:
" No one can predict what will finally be the exact number of human victims"

The SLO GREEN Party concurs with these conclusions. We add the following comments:
While the exact numbers may never be known, it is clear that the often used number of 31 deaths is misleading because this number refers only to the immediate deaths. It is further apparent that the total number of deaths related to the radiation release will ultimately number in the thousands if not tens of thousands. Most available estimates are restricted to the Ukraine areas only; statistics from Belarus, which received much more radioactive contamination, are not readily available.
The Nuclear Information and Resource Service (NIRS) is currently working on a comprehensive update.

Besides of the human toll, the monetary costs of the Chernobyl accident need also to be taken in consideration. Estimates of the area of contamination are as much as 100,000 square miles in the Ukraine, Belarus and Russia. [Marples, Ibid.]

A Reuters News Release from 2-13-96, quotes Ivan Kenik, the Belarus Chernobyl minister, putting the price tag at $ 235 billion [www.whykio.3.com/source2=overture.html].
The GREENPEACE website estimates the cost to reach "in excess of $ 300 billion by 2015".
[www.archive.greenpeace.org/comms/nukes/chernob/]

II. How do the above statistics relate to PG&E's application for an ISFSI at Diablo Canyon?

After 10 years decay time, Cesium 137 makes up 20.9% of the total radioactivity in High Level Radioactive Waste ("Spent Fuel"), Strontium 90 14.4% [Source: "Characteristics of Potential Repository Wastes", Oak Ridge National Laboratory, DOE/RW-0184-R1, Vols, 1-4, July 1992]. These two radio nuclides were primarily responsible for the off-site contamination at Chernobyl. Due to their volatile nature, they are also "the primary sources of exposure during routine operations and the major potential source of irradiation and contamination in the event of an accident or terrorist attack ....." [Halstead and Ballard, " The Risk of Terrorism and Sabotage against Repository Shipments", page 6, in the 12/98 report for the Nevada Agency for Nuclear Projects]. According to Robert Alvarez, former senior policy advisor in the US Dept. of Energy, 2.4 million curies of Cesium 137 were released at Chernobyl, "resulting in massive off-site radiation exposures" ["What about spent fuel?", Bulletin of the Atomic Scientists, Jan./Febr. 2002, page 46]. Diablo's spent fuel pools contain far more Cesium 137 than was released in Chernobyl. Alvarez [Ibid.] estimates that an average spent fuel pool at a Pressurized Water Reactor like Diablo Canyon contains up to 50 million curies in Cesium 137, or about 20 times as much as was released at Chernobyl. Alvarez quotes Dr. Thompson, senior scientist at the Institute for Resource and Security Studies: "While estimates vary, the use of a little imagination shows that a pool fire would be a regional and national disaster of historic proportion".

The SLO GREEN Party is especially alarmed by the 10/2000 NRC finding on Spent Fuel Pool Safety [NuReg 1738 (?)], which concedes that a fire in the pools is possible (even with older spent fuel assemblies), cannot be extinguished, and would release up to 100% of the Cesium 137 into the environment. While this finding deals with pools at decommissioned plants, its results are comparable to operating plants, especially after each re-fueling. The NRC identifies aircraft crashes, among others, as potential causes for a pool fire. The NRC did not require operators of nuclear plants to prepare for such events because it assumed that an accidental crash is too improbable and an intentional crash could not happen in the US. The events of 9/11 have rendered the latter assumption obsolete.
Moreover, the NRC compares the consequences of a pool fire to a severe reactor accident [10/2000 finding, page 3-28]. " A 1997 report for the NRC by Brookhaven National Laboratory found that a severe pool fire could render 188 square miles uninhabitable, cause as many as 28,000 cancer fatalities, and cost $59 billion in damages" [Alvarez, Ibid.]. Dr. Thompson concludes in a declaration in front of the NRC on 10/31/02 (Docket No. 50-423-LA-2) for

the Millstone Reactor Unit 3 in Connecticut, that a pool fire there would render 150,000 square kilometers uninhabitable [point XI-7].

Under the current PG&E proposal, the two spent fuel pools would reach capacity in 2006 and then would stay at capacity until decommissioning in 2021/2025 and if re-licensing should occur, until at least 2052! It is important to understand that the pools at Diablo underwent re-racking in 1986 and became high density pools. According to the NRC finding, high density pools have a substantially higher risk of a pool fire (compare also Gordon Thompson's declaration on 10/31/2001, point IV-1 ff.).
These recent findings of the NRC regarding spent fuel pool fire dangers suggest a much higher risk to the public than previously thought. Yet PG&E's application does not provide for sufficient protection against credible risks, especially terrorism. The pools do not have the structural strength of the domes and do not have containment! The proposed ISFSI provides for just a chain link fence. A far safer alternative would be a combination of a sufficiently protected ISFSI with equally protected LOW DENSITY pools. Yet this safer alternative is not discussed in PG&E's application.

Another safer option not discussed in PG&E's application is a longer time period for on-site storage in dry casks. Due to the natural decay, a longer waiting period before transportation would render radio nuclides, such as Cesium 137 (half life 30 years) and Strontium 90 (half life 28.1 years), far less radioactive and would also substantially drop the surface temperatures of the spent fuel assemblies thus making handling easier and transportation to a final repository less risky for the public at large [compare also the SAFESTOR concept as discussed in THE NUCLEAR MONITOR, Febr. 2000, page 6].

Finally, the SLO GREEN Party refers to our letter submitted to you and the NRC on 9/26/02, in particular to Robert Alvarez's article. We would like to stress that the only safe way to deal with high level radioactive waste is not to produce it in the first place. The SLO GREEN Party again asks you to fulfill your mandate in the interest of public health and safety.

For the SLO GREEN Party

Klaus Schumann,
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
PACIFIC GAS AND ELECTRIC CO.	)	Docket No. 72-26-ISFSI
DIABLO CANYON POWER PLANT	)	
	)	
(Independent Spent Fuel Storage	)	
Installation)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing LIMITED APPEARANCE STATEMENT OF KLAUS SCHUMANN have been served upon the following persons by U.S. mail, first class, or through NRC internal distribution.

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Dated at Rockville, Maryland,
this 31st day of October 2002