Prime Minister Naoto Kan
Minister of Finance Yoshihiko Noda
Minister of Economy, Trade and Industry Masayuki Naoshima

August 11, 2010

Dear Prime Minister Naoto Kan, Minister of Finance Yoshihiko Noda, and Minister of Economy, Trade and Industry Masayuki Naoshima,

We are writing to share with you the financial risks involved with new atomic reactor projects proposed in the United States. The environment for nuclear construction in the US is highly uncertain – much more so than in the rest of the world. The US has immense renewable energy resources that are truly unparalleled around the world and a larger potential for efficiency gains than in any other industrialized nation. As a consequence of these fundamental marketplace and technology risks, investment in new reactors in the US will remain extremely risky, even if climate legislation is enacted that raises the price of fossil fuels.

Electricity demand has plummeted in the U.S. due to the two-year economic recession. The large projected increases in electricity demand made just a few years ago – which served as the basis for many new reactor proposals – are now highly unlikely to be reached for another decade or more.

At the same time, the US has a host of lower-cost alternatives to meet the need for electricity, even in a carbon-constrained environment. The U.S. has abundant renewable energy resources that are significantly cheaper than new reactors. Estimated costs for constructing new reactors in the U.S. have quadrupled since 2001, while the cost of renewable technologies continues to decrease. Currently, the estimated cost for electricity from a new reactor is 12 cents to 20 cents per kilowatt-hour, compared to 3 cents per kilowatt-hour for efficiency, while several plentiful renewable resources including wind and biomass fall in the range of 5 to 10 cents. Moreover, there is growing confidence in the availability of alternatives. Recent estimates of the natural gas resources have increased dramatically and the price has tumbled and is expected to remain low. Cogeneration opportunities are abundant in the U.S. industrial sector.

Meanwhile, the US uses far more electricity per capita than other industrialized nations, leaving a lot of potential for efficiency to further dampen electricity demand. Climate policy, which may put a price on carbon emissions, will also likely create a very substantial mandate for efficiency technology and renewable energy that will dramatically shrink the need for new, nonrenewable, large baseload generating capacity. It is not only renewable electricity standards and energy efficiency resource standards that will have this effect, but also building codes, appliance efficiency standards, and increases in funding for weatherization retrofitting of buildings.

In addition to the supply- and demand-side risks in the US, significant problems with new reactor designs have meant that none have received final certification from the U.S. Nuclear Regulatory Commission (NRC). Until their reactor designs are certified, no proposed new reactors can receive an NRC combined construction and operating license (COL). Design problems are likely to delay licensing and further increase the costs.

Moody's Investor Services have called new reactors a "bet the farm" investment. Credit rating agencies have downgraded some US utilities proposing to build new reactors. In 2003, the Congressional Budget Office (CBO) estimated the likelihood of default for loans made to nuclear reactor developers to be "very high – well above 50 percent." CBO has not developed a more recent estimate, but the necessary conditions for new reactors have only deteriorated further since then.

Due to Japanese corporate involvement in many of the proposed US reactor projects, it might appear that they would make good investments. The reality, however, is that the projects involving Japanese companies have suffered the same delays, design problems and financial difficulties as other proposed nuclear projects. With decreased U.S. electricity demand, an abundant supply of cheaper alternatives and ongoing design problems, investment in new reactors in the U.S. is simply as bad a deal for Japanese investors as it is for American investors.

Just as we have warned American taxpayers and elected officials about these very serious financial risks, we also urge you to very carefully consider these risks before deciding to invest in new atomic reactors in the United States.

If you have any questions, please don't hesitate to contact Kevin Kamps at Beyond Nuclear, (301) 270-2209 extension 1, as well as Michele Boyd at Physicians for Social Responsibility, (202) 667-4260.

Sincerely,

Nikos Pastos
Alaska's Big Village Network
Alaska

Rochelle Becker
Alliance for Nuclear Responsibility
California

Lewis Cuthbert
The Alliance for A Clean Environment
Pennsylvania

Jeff Napolitano
American Friends Service Committee

Western MA Chapter
Massachusetts

John Runkle
AP1000 Oversight Group
International

Kevin Kamps
Beyond Nuclear
National

Bob Kinsey
Colorado Coalition for the Prevention of Nuclear War
Colorado

Grant Smith
Citizens Action Coalition of Indiana
Indiana

Victor McManemy
Citizens for Alternatives to Chemical Contamination
Michigan

Deb Katz
Citizens Awareness Network
Massachusetts, Vermont, New York, New Hampshire

David Hughes
Citizen Power
Pennsylvania

Keith Gunter
Citizens Resistance at Fermi Two (CRAFT)
Michigan

Suzanne Miller
Cleveland Peace Action
Ohio

Michael Keegan
Coalition for a Nuclear-Free Great Lakes
Michigan

Donald B. Clark
Cumberland Mountains for Peace & Justice
and
Network for Environmental & Economic Responsibility
United Church of Christ
Tennessee

Kathryn Barnes
Don't Waste Michigan
Sherwood Chapter
Michigan

Lynn Sims
Don't Waste Oregon
Oregon

Chris Trepal
Earth Day Coalition
Ohio

Cara L. Campbell
Ecology Party of Florida
Florida

James Robert Deal
Flouride Class Action
Washington

Bob Darby
Food Not Bombs
Georgia

Tom Ferguson
Foundation for Global Community/Atlanta
Georgia

Patricia T. Birnie
GE Stockholders Alliance
Arizona

Christopher LaForge,
Great Northern Solar
Wisconsin

Bonnie Redding
The Green Party of Florida
Florida

Jim Riccio
Greenpeace
National

Joan McCoy
Home for Peace and Justice
Michigan

Lynn Howard Ehrle
International Science Oversight Board
National

Mavis Belisle
JustPeace
Texas

Mark Haim
Missourians for Safe Energy Coalition
Missouri

Jim Warren
NCWARN
North Carolina

Dave Kraft
NEIS
Illinois

Judy Treichel
Nevada Nuclear Waste Task Force
Nevada

Gene Stilp
No Nukes Pennsylvania
Pennsylvania

Nina Bell, J.D.,
Northwest Environmental Advocates
Oregon

Alice Slater
Nuclear Age Peace Foundation
New York

Mali Lightfoot
NuclearFreePlanet.org
Oregon

Michael Mariotte
Nuclear Information and Resource Service
National

Glenn Carroll
Nuclear Watch South
Georgia

Jay Coghlan
Nuke Watch
New Mexico

Ralph Hutchinson

Oak Ridge Environmental Peace Alliance
Tennessee

Lloyd Marbet
Oregon Conservancy Foundatoin
Oregon

Cindy Peil
PAARC (People Against A Radioactive Chesapeake)
Maryland

Ayumi Temlock
Peace Action
Connecticut

Judi FriedmanÅ&Mac245;
PEOPLE'S ACTION FOR CLEAN ENERGY, INC
Connecticut

Elena Day
People's Alliance for Clean Energy (PACE)
Virginia

Michele Boyd
Physicians for Social Responsibility
National

Robert M. Gould, MD
Physicians for Social Responsibility
SF-Bay Area Chapter
California

Lewis Patrie, M. D.
Physicians for Social Responsibility
Western , NC Chapter
North Carolina
Mary Lampert
Pilgrim Watch
Massachusetts

E.M.T. O'Nan
Protect All Children's Environment
North Carolina

Tyson Slocum
Public Citizen
National

Judith Mohling
Rocky Mountain Peace and Justice Center
Colorado

Dennis F. Nester
The Roy Process
Arizona

Russell Lowes
www.SafeEnergyAnalyst.org
Arizona

Randy Kehler
Safe & Green Campaign
Vermont

Susan Corbett
Sierra Club Nuclear Issues Activist Team
National

Jill Johnston
Southwest Workers Union
Texas

Maureen Heddington
Stand Up/Save Lives Campaign
Illinois

Ken Bossong
SUN Day Campaign
National

Terry J. Lodge, Esq.
Toledo Coalition for Safe Energy
Ohio

Marylia Kelley
Tri-Valley CAREs
California

Patty Gillis
Voices for Earth Justice
Michigan

Greg Wingard,
Waste Action Project
Washington

Al Gedicks
Wisconsin Resources Protection Council
Wisconsin

Diane Farsetta
Wisconsin Network for Peace and Justice
Wisconsin

Nancy Munger
Women's International League for Peace and Freedom
National

Sara Barczak
Southern Alliance for Clean Energy
Georgia

Nancy Burton
Connecticut Coalition Against Millstone
Connecticut

Bobbie Paul
Georgia Women's Action for New Directions.
Georgia

Vina Colley
Portsmouth/Piketon Residents for Environmental Safety and Security and Nuclear Workers for Justice
Ohio

Gwen DuBois, M.D., MPH
Chesapeake Physicians for Social Responsbility and Crabshell Alliance
Maryland

Backgrounder on Financial Risks

of Proposed New Reactors in the United States

(This backgrounder relied on analyses and media releases by Taxpayers for Common Sense, Friends of the Earth, and Southern Alliance for Clean Energy, referenced at the bottom)

Two AP1000s proposed at Vogtle nuclear power plant, Georgia

The first ***conditional*** U.S. federal nuclear loan guarantee was awarded to Southern Company, its subsidiary Georgia Power, and additional partners for two new reactors proposed at the Vogtle nuclear power plant in Georgia. This $8.33 billion federal loan guarantee will cover only around 70% of the currently estimated project cost. Tellingly, the conditional loan guarantee was not enough for private investors to engage with the financially risky project. Instead, Southern intends to borrow the money from the Federal Financing Bank, a U.S. government funded lending institution. The loan guarantee cannot be finalized, however, until the COL application has been approved by NRC. This will also require NRC to issue a final design certification for the AP1000, currently in its 17th revision. But complications have already arisen.

In October, 2009 NRC announced a flaw in the design of the AP1000's shield building, a concrete structure around the reactor's steel radiological containment. Vulnerability to earthquakes, as well as severe weather such as tornadoes and hurricanes, was cited. In addition, NRC staff even questioned the structural ability of the AP1000 shield building to support a tank of emergency cooling water. The NRC has not issued a date certain for completing its design review, while Toshiba-Westinghouse attempts to address these serious concerns.

In April, 2010 yet another serious AP1000 design flaw was revealed, this one previously missed by NRC. A coalition of a dozen environmental organizations, and their expert witnesses, nuclear engineer Arnold Gundersen of Fairewinds Associates, Inc., and corrosion expert Dr. Rudolph Hausler, showed how convection currents intended to dissipate heat during a reactor emergency could actually facilitate the "chimney effect" release of large amounts of radioactivity to the environment, if the inner metallic containment shell is breached by corrosion. Such breaches of containment have occurred at operating U.S. atomic reactors, with dozens of corrosion holes and cracks documented. The coalition has called upon NRC and its Advisory Committee on Reactor Safeguards (ACRS) to address this latest design flaw, as well as the Department of Energy and

White House Office of Management and Budget to stop subsidizing the dangerously flawed AP1000 design with federal loan guarantees.

Besides technical problems with the reactor design, a recent Georgia state court decision could delay the new reactors even further, by calling into question a key aspect of the project's financing.

Last year, the State of Georgia enacted a controversial new law, which allows Georgia Power to charge financing costs to ratepayers during construction of the new reactors, rather than over the life of the project and only after it has started to generate electricity. The pre-operations charges could occur even if the reactors are never completed and ratepayers receive no electricity in return for their payments. The "construction work in progress" (CWIP) law also exempts large industrial and commercial ratepayers, who have access to different rate options than smaller customers, such as residential households and small businesses. In response to such exploitative policies, consumer and environmental organizations, including Southern Alliance for Clean Energy, have challenged the legislation in state court.

On April 30, 2010, Fulton County Superior Court ruled against the Georgia Public Service Commission (PSC), finding that it failed to explain its reasoning in approving Georgia Power's plan to expand the Vogtle nuclear plant and have ratepayers pre-pay for CWIP.

Hearings at the PSC are underway this summer to evaluate Georgia Power's expenditures thus far on the estimated $14 billion project. Georgia Power still claims that the project is under budget and on schedule. However, Southern Company's public disclosure versions of the Company's testimony are more heavily redacted than other utilities pursuing new reactors. For instance, the current costs sunk into the Vogtle project and any scheduling changes are marked trade secret in the docket currently before the PSC. The PSC will make a final decision by August 17 on whether to approve the incurred costs and will decide on a Georgia Power rate case later this year that will address these initial costs among other costs.

Although it is rumored that the next nuclear loan guarantee will be awarded to UniStar Nuclear Energy (a partnership between Constellation Energy of Baltimore and Electricite de France, owned by the French government) for a French Areva EPR at Calvert Cliffs nuclear power plant in Maryland, the next two nuclear loan guarantee recipients after that are reported to be NRG (in partnership with Toshiba, TEPCO, and CPS Energy, for two ABWRs at South Texas Project nuclear power plant near Bay City, Texas) and SCANA Energy/South Carolina Electric and Gas (SCE&G, for two AP1000s at V.C. Summer nuclear power plant in Jenksville, South Carolina). But as with the AP1000s proposed at Vogtle, these latter two proposals, also involving Japanese reactor design vendors -- and even Japanese partners, Toshiba and TEPCO, in the nuclear utility ordering the reactors at South Texas Project -- are also plagued with problems.

Two ABWRs proposed at South Texas Project nuclear power plant

NRG Energy proposes to construct two GE-Hitachi ABWRs at its South Texas Project site near Bay City, Texas. The project was a partnership between NRG and CPS Energy (the City of San Antonio's municipal utility). The original cost estimate for each reactor was $5.4 billion, but in October 2009, it was revealed that costs were now estimated to be nearly $18 billion for the overall project. The $4 billion per reactor cost increase created a firestorm of controversy, for it was hidden from the San Antonio City Council. Disagreements over the cost increase led to a lawsuit between CPS and NRG. The scandal led to the resignation of the CPS General Manager and Board Chairman.

In February 2010, CPS and NRG reached a settlement agreement, reducing CPS's share of the project from 50% to just 7.6%. The remaining 92.4% belongs to Nuclear Innovation North America (NINA), a partnership between NRG and Japanese-owned Toshiba. The agreement between NINA and CPS stipulated that NINA will cover future development costs, and will pay CPS $80 million, but only if the proposal is awarded a federal loan guarantee.

In May, 2010, Tokyo Electric Power Company (TEPCO) purchased an 18% stake in the South Texas Project nuclear power plant expansion, amounting to a $155 million investment.

NRG still needs additional partners and customers for its electrical output. The reactors will have to compete in a deregulated electricity market. This troubles investors, as electricity demand and sales prices are depressed due to the recession.

Two AP1000s proposed at V.C. Summer nuclear power plant, South Carolina

The two proposed AP1000s that would expand the Summer nuclear power plant in South Carolina share the design defect concerns described above for the Vogtle nuclear power plant expansion.

In addition, the national environmental group Friends of the Earth (FOE), as well as South Carolina Energy Users Committee, an association of large electricity users in the state, have appealed to the South Carolina State Supreme Court, challenging the legality of the South Carolina Public Service Commission's (PSC) February 2009 approval of the atomic project. This legal challenge extends to the PSC's approval of "construction work in progress" charges to ratepayers for the new reactors, even if the construction is never completed. FOE alleges that SCANA/SCE&G's refusal to provide a price per kilowatt hour for the new reactors means that the PSC's approval represents a "blank check" for the company, at the expense of ratepayers. The lawsuit also challenges the failure by the company, as well as state regulatory agencies, to

adequately consider alternatives to the new reactors, for instance efficiency and conservation, as well as the proposal's ultimate costs. FOE's appeal was heard in March, 2010, but no ruling has yet been made on this challenge to a key aspect of the new reactors' financing scheme.

In the space of single year, SCE&G increased its cost estimates for the two new reactors from $9.8 billion to $11.5 billion. However, Southern/Georgia Power's cost estimates for the two new AP1000s at Vogtle, Georgia is $14 billion, raising doubts about the reliability of SCE&G's cost prediction figures.

SCE&G has failed to secure private financing to support its proposal. In June 2009, Fitch Ratings lowered the rating status of SCANA, the parent company of SCE&G, due to the risks associated with this AP1000 construction project. In July, 2009, Moody's Investor Services also lowered the bond rating of SCANA, citing risk associated with this twin reactor project for a company of SCANA's size. In addition, in June 2009, Moody's reported that the potential federal loan guarantees would "only modestly mitigate increasing business and operating risk profile."

With a market capitalization value of only about $5 billion, SCE&G is playing a dangerous "bet the company" hand, as the cost of its share of the project exceeds the value of the company.

A January 2010 South Carolina PSC weakening of its enforcement rules concerning project delays should serve as a warning that substantial construction schedule slippages are to be expected, likely resulting in further cost increases.

In a quarterly earnings report teleconference of February 11, 2010, SCANA reported a drop in income of about 9% due to a sharp decrease in electricity consumption. The drop in electricity usage of 4.3% in the quarter and 5% for the year, with industrial use declining 13%, could not be offset by cost-cutting steps (such as deferred maintenance) due to the higher rates for the nuclear project.

SCE&G has admitted that the delayed NRC review of the AP1000 reactor design is causing a delay in the receipt of a combined construction and operating license (COL), delaying by at least several months the schedule that SCE&G has presented to the Public Service Commission. NRC's lack of a date certain for certifying the AP1000 reactor design could significantly prolong SCE&G's COL application proceeding.

A Nuclear Regulatory Commission Atomic Safety Licensing Board (ASLB) had rejected contentions raised in interventions in the Construction and Operating License Application (COLA) by the South Carolina Sierra Club and Friends of the Earth. But in December 2009, the NRC Commission itself reinstated contentions related to cost and consideration of alternatives and sent the intervention back to the licensing board. A successful intervention could further delay the project by prolong the COL proceeding.

Additional nuclear loan guarantee applicants

Additional new reactor proposals involving Japanese owned reactor design vendors reported to have applied for federal nuclear loan guarantees include:

Duke Energy applied for a loan guarantee to fund the William States Lee III Nuclear Station (two Toshiba-Westinghouse AP1000s on a green field site) in South Carolina. The price tag on these two reactors, excluding financing costs, is estimated at $11 billion, which is twice the amount of Duke Energy's original estimate. Including financing costs, the price tag could mount to $14 billion. In fall 2009, Duke announced a three-year delay in the process, moving expected start-up back from 2018 to 2021.

Exelon Nuclear requested a loan guarantee to build two new ESBWR reactors at Victoria County Station in Texas. In late 2008, Exelon announced it was abandoning the ESBWR, in search of another reactor design. When Exelon decided to suspend the project in summer 2009, the two reactors were expected to cost $16 billion. On July 26, 2010 NRC officially accepted Exelon's motion to withdraw its COL application, effectively cancelling the proposal.

Progress Energy applied for funds to build two Toshiba-Westinghouse AP1000s at a green field site in Levy County, Florida. Project costs could exceed $17 billion and would require the largest transmission project in Florida's history. This project is now delayed.

Luminant Power proposed adding two Mitsubishi Heavy Industries USAPWRs (Units 3 and 4) in order to expand the Comanche Peak nuclear power plant in Texas. Luminant has estimated the cost for both reactors will total $15 billion. This project is pending.

Entergy requested a loan guarantee to expand the Grand Gulf nuclear power plant in Mississippi by adding a GE-Hitachi ESBWR (Unit 3). The reactor was expected to cost between $5-8 billion. However, in late 2008-early 2009, Entergy announced it was abandoning the ESBWR design, in search of another. This project is currently suspended. Entergy also proposed expanding River Bend nuclear power plant in Louisiana by adding a GE-Hitachi ESBWR (Unit 3). The cost for building one reactor was estimated to range from $5-8 billion. Like at Grand Gulf, Mississippi, Entergy decided to abandon the ESBWR design, in search of another. This project is currently suspended.

Dominion Virginia Power and Old Dominion Electric Cooperative asked for funds to build a new ESBWR (Unit 3) at the North Anna nuclear power plant in Virginia. It had originally proposed two reactors at the site earlier this decade. When the project was suspended, the GE Hitachi ESBWR reactor was expected to cost upwards of $10 billion. Dominion has now also abandoned the ESBWR design, recently replacing it with the USAPWR.

Other COL Applicants

Yet more new reactor proposals involving Japanese owned reactor design vendors, which have applied for NRC combined construction and operating licenses (COL):

NuStart Energy consortium, two AP1000s at Bellefonte nuclear power plant, Alabama. Progress Energy, two AP1000s at Shearon Harris nuclear power plant, North Carolina. Detroit Edison, one ESBWR at Fermi nuclear power plant in Monroe, Michigan. Five contentions submitted by a coalition of environmental groups have thus far been admitted by the NRC licensing board, including one challenging the quality assurance on the COL application.

Florida Power and Light, two AP1000s at Turkey Point nuclear power plant in Florida. The Florida Public Service Commission, in January 2010, rejected a billion dollar rate increase under "Construction Work in Progress" laws, putting new reactors in Florida under the regulated rate base in doubt.

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