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US Nuclear Regulatory Commission
Washington, DC 20555-0001

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Dear Sir or Madam:

Re: License Renewal of Nuclear Power Plants. Comments on the environmental scope of the Generic Environmental Impact Statement (GEIS) Update Project. 68 FR 33209 (6/3/03)

The last order for a nuclear power plant in the United States that was not subsequently canceled was placed in October 1973 --- thirty years ago. That is because the public --- including the majority of the directors of America's investor-owned electric utilities --- recognized that nuclear plants are expensive, dirty and dangerous. Even if they were cheap, however, and clean and safe, no technology or location has been found to isolate radioactive wastes for the requisite millennia. The longer nuclear power plants operate in the United States, the greater will be the waste burden.

Even the oldest radioactive wastes of the Atomic Age, those that were generated right here in St. Louis, starting in April 1942, still have no place to go. And no safe, terrorist-proof container or route has been found to transport the nation's stockpiles of irradiated fuel rods to the proposed Yucca Mountain, Nevada, site, an area prone to earthquakes and volcanoes, and revered by the Western Shoshone who have lived there for generations. If the Nuclear Regulatory Commission were to approve the Yucca Mountain site, and if the repository were to be built and become operable, it is estimated my hometown would have to accept one shipment of high-level waste every other day, on the average, for the next thirty years.

I am submitting these comments to urge the Nuclear Regulatory Commission to wake up from the initial dream of one-thousand nuclear reactors on line by the Year 2000 and to admit that the only way to keep even today's 103 nuclear power reactors operable is to keep patching, welding and replacing their aging and expensive maze of systems, structures, and components. As a physics professor said to me back in 1977: "We will have nuclear power until there is a major catastrophe, and that's just a matter of time."

I am also submitting these comments with the naïve hope that a cadre of leading NRC nuclear engineers and technologists will have the courage to say: "Enough is enough." I believe our nation's nuclear power plants should be shut down unless and until a safe solution and location can be found for the radioactive wastes already stockpiled nationwide, and unless and until workers assigned to retrofit leaking, corroded, embrittled and outmoded parts can be provided with precise and accurate monitoring equipment and with protective clothing and masks that are impenetrable to radiation. I certainly do not believe that the NRC should renew the operating

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licenses for up to an additional 20 years. In fact, I do not believe nuclear power plants are safe enough to operate for the full 40-year duration of their existing licenses. My reasons include the following:

- 1) I believe that the environmental issue regarding "impacts of refurbishment on surface water quality" should not be treated as a Category 1 item --- that is, as one that is not to be assessed for each reactor site independently. (I apologize if I have read the "Appendix B to Subpart A" table incorrectly, but my computer was not able to let me view or print out the right and left margins concurrently.)

Each reactor or set of reactors will have been releasing its own unique collections of radioisotopes into its cooling water source (river, lake or ocean) during the duration of its license, and each receiving body of water has its own flow rates, volume, drought history, accumulation of sediments, etc. The effluents that will be released into the environment during the 20-year license renewal term would also be uniquely determined --- based on the reactor's operating history, including the designs and operating history of its systems, structures and components.

We are often told that pollutants are of little concern when they are diluted or dispersed into the vast atmosphere or into large bodies of water. In fact, the NRC's draft License Renewal GEIS of August 1991 implies just that: "Radioactive material released to the atmosphere tends to spread and disperse in air and dilute in water." (NUREG-1437, Vol. 1, p.5-44) Similar dispersal and dilution claims are made for the carbon dioxide, sulfur dioxide, nitrogen oxide, and mercury that are released from fossil-fuel plants, and yet we now know that the impacts of the Mid-Western coal-fired plants on Pennsylvania and other East Coast states are harmful, and contribute to global warming. Some of a nuclear power plant's gaseous effluents and liquid discharges --- containing long-lived radioactive wastes --- may disperse and become diluted over time, but they will nevertheless persist in the human environment. The radiological releases from the entire uranium fuel cycle, from mining through waste disposal, will likewise continue to pose risks to the biosphere.

No economically feasible technology exists that can filter such beta-emitters as tritium, krypton, and xenon from the routine releases of a nuclear plant, and no equipment exists that can monitor precisely the full range of components in the releases into the atmosphere (during venting, purging and mini-purging) or into the cooling water source (during continuous and batch releases). Therefore, radioactive materials are released into the environment in unknown quantities and concentration levels. In other words, no one really knows how much is released or where it ends up. At the very least, the NRC should attempt to assess, as judiciously as possible, the impacts on surface and groundwater, air and soil that the routine and accidental releases of radioactive wastes would have during the requested 20 years of additional operation.

- 2) I would also urge you to study the "discharge of chlorine or other biocides" on a site-specific basis. I have read of concerns that even some of the NRC licensees have had about the excessive amounts of chlorine needed for their cooling towers.

- 3) With respect to aquatic ecology issues and, specifically, the "accumulation of contaminants in sediments or biota," again I believe that a site-specific analysis is warranted. Because of variations in the plants' operating histories --- including unplanned events, the quality of the fuel rods, etc. --- the amounts of corrosion, activation and fission products released to the cooling water source from each nuclear plant is different. The buildup in the sediment at the discharge pipe of cobalt-60, and other isotopes released with the discharge water, is potentially available to bottom-feeding fish. The longer a reactor operates, of course, the greater will be the accumulation of contaminants. It should also be essential to analyze the drinking water intakes of the closest downstream towns or cities, especially if those communities have larger populations than when the plant's initial environmental statement was prepared and its construction permit was issued.

As a nuclear plant ages, solvents like chelating agents are used to dissolve radioactive corrosion products and other materials that have plated out over the years on surfaces of pipes, pumps and other components. Because the radioactive materials may stay bonded to the chelates, and thus remain in solution, they can pass out through the liquid-waste filtering system and be released into the environment. The buildup of crud and the need to use solvents increase as the plant ages. (For example, chelates are used to reduce corrosion products that emit penetrating gamma rays that may have accumulated within pipe elbows, making the pipes dangerously less efficient and precluding the ability of inspectors and repair personnel to get near a leaking pipe.) Only by analyzing the sediment near a specific plant's discharge structure can an evaluation be made of the environmental impacts of the liquid effluent during the plant's 40-year operating life and an estimate be made of the impacts to be expected during the requested 20-year license extension. The downstream aquatic ecology is also, of course, affected. (We can only hope that someday soon better environmental monitoring technologies will become available for water, air and land.)

Although I have many other reasons to be concerned about the proposal to allow already-old, failure-prone reactors to continue operating for up to 20 years beyond their 40-year operating license term, I will close by quoting just one additional observation from the NRC's "Appendix B to Subpart A [of 10 CFR 51] --- Environmental Effect of Renewing the Operating License of a Nuclear Power Plant."

The NRC staff has concluded that the environmental impacts of design basis accidents are of small significance for all plants.

This statement is so unbelievable, it calls into question other staff conclusions.

If the NRC is to comply with the mandates of the National Environmental Policy Act, I believe a site-specific environmental impact statement should be prepared for any nuclear power plant for which an NRC licensee is requesting an operating license or construction permit extension --- with no exclusions permitted of Category 1 generic issues.

Sincerely, Kay Drey