

**To: Blue Ribbon Commission on America's Nuclear Future**  
**From: Robert F. Howarth, Asheville, NC 28806**  
**Re: Comments From a Citizen's Perspective**

### **1. Introduction**

I am Robert F. Howarth visiting here today from my residence in Asheville, NC. Now retired from a career as an electro-optical engineer with a Master's of Science in Engineering degree, I am a member of the Western North Carolina Physicians for Social Responsibility, a member of the Union of Concerned Scientists, and also a tax paying citizen of the United States of America.

### **2. Concern**

Why should I as a citizen from Asheville, NC be concerned about a proposed nuclear waste recycle/reprocessing program at Savannah River Site, GA? I am concerned about:

- \* Transit dangers in moving radioactive nuclear waste on our public highways to and from the reprocessing site.
- \* Ecology damage, post-processing long term storage effects and costs.
- \* The uses to which the reclaimed materials will be applied. More nuclear fuel? Weapons for more ill-fated wars? Roadway sub-surface foundations? What?
- \* Terrorism risk, alien enemies or homegrown psycho-fanatics?
- \* Error penalty - we humans all make an occasional mistake, error. There appears to be no infallible protection against this.
- \* The overriding concern is that we citizens have been misled by nuclear proponents claiming that nuclear energy is clean and less expensive than other sources of energy. This is revealed by EROEI analysis, Energy Return on Energy Invested <sup>1</sup>, illustrating that of 20 feasible energy sources considered, 14 are superior to nuclear, and 17 have less carbon footprint than nuclear. EROEI, also known as Net Energy, has been defined as "the energy delivered by an energy-obtaining activity compared to the energy required to get it" <sup>2</sup>. This overall efficiency assessment includes a whole system consideration from the extraction at the source, processing, construction and operation of the delivery plant, and cost of any subsequent waste handling and/or disposal. This I believe is looking at the "whole picture" in the way it really is, in an honest appraisal. Furthermore, another comparison shows nuclear as having the 3<sup>rd</sup> highest carbon footprint among the same 20 candidates following only conventional coal and tar sands<sup>3</sup>. The EROEI concept should be applied to all projects, especially those dependent on taxpayer support.

### **3. Other Nuclear Factors**

- \* Cleanup costs - usually not in estimates, later paid by customers & taxpayers.
- \* Health effects and cost - unknown initially, show up as poor health & impact health insurance rates.

- \* Water use and contamination - huge cooling demand from existing sources. Danger of contamination to aquifers.
- \* Construction costs of nuclear facilities - are 7 times estimates<sup>4</sup>.
- \* Construction times are 2 times estimates<sup>4</sup>.

#### 4. Remedy & Treatment

There is little doubt that we can do better for the health and well being of we taxpayers as well as for the Earth's ecology than to continue on the nuclear path. The position of short term bottom line profit thinking proponents of nuclear relies on huge taxpayer supported government subsidies for liability insurance, on a narrowly defined "partial system" efficiency assessment rather than looking at the "whole picture" in the way it really is, in an honest way using EROEI as remedy.

As treatment we need follow the prescription presented in Plan B proposed by Lester Brown of the Earth Policy Institute. I want to see us adopting Plan B and investing in its components to generate a world that is more healthy, more safe, and more humane than what I see resulting from our current trajectory. Keep the radioactive wastes safely contained where they are, phase out nuclear. Implement Plan B!

1 The Transition Handbook, Rob Hopkins, P.51; Chelsea Green Publishing, White River Junction, Vermont

2 ibid. P. 50

3 ibid. P. 52

4 Real Cost of Nuclear Power, Mark Cooper, The Institute for Energy and Environment, Vermont University