

To: Blue Ribbon Commission on America's Nuclear Future
From: Robert F. Howarth, Asheville, NC; robfhow@gmail.com, 18 Jan. 2012
Re: Comments on the Draft EIS for COLs William States Lee III

1. Introduction

I am Robert F. Howarth from 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 a tax paying citizen of the United States of America. I previously testified to this commission on Jan. 7, 2011 and presented to you my concerns regarding the proposed reprocessing program for the Savannah River Site, GA. Those comments are listed in Vol. 2 of your Draft EIS for COLs for William States Lee III. I need not reiterate them today, but they remain relevant and pertinent to today's subject .

2. Concern

Today I want to emphasize the overriding concern 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 ¹, illustrating that of 20 feasible energy sources considered, 14 are superior to 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" ². This overall efficiency assessment constitutes a whole system consideration from the extraction of ore at the source, its transportation and 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. A carbon footprint comparison shows nuclear as having the 3rd highest carbon footprint among the same 20 candidates following only conventional coal and tar sands³. I contend that EROEI should be applied to all projects, especially those dependent on taxpayer support. I am concerned that EROEI appears to have been ignored in your work. While I recognize that the mission of BRC is not to determine national energy policy I do think you would be obliged to recommend the use of EROEI as a powerful tool for your goal of "recommending a new plan for America's Nuclear Future".

3. Other Nuclear Factors of Concern

- * Health effects and cost - may be unknown initially, but show up as poor citizen health & soon impact health insurance rates.
 - * Water use and contamination - huge cooling demand from existing sources.
 - * Construction costs of nuclear facilities - are often 7 times estimates⁴.
 - * Construction times are 2 times or more than estimates⁴.
- These all show up as costs that are ultimately borne by we taxpayers.

4. Observation

It is quite apparent to me and from most of the comments listed in Vol. 2 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, and on a narrowly defined "partial system" efficiency assessment. Rather we must look at the "whole picture" the way it really is using EROEI.

5. Economics

I believe investing millions of dollars required to bring on line a nuclear power plant is not a good investment. History demonstrates that cost always exceeds initial estimates⁴, financing is dependent on government subsidy in the form of liability insurance, and the 5 to 10 year or more construction time is too long. Other alternative means of power generation can be brought on line in less time, provide many more construction jobs for many more companies, are less risky, do not require large taxpayer liability subsidy, and do not hold the threat to my health, your health, and ecological health posed by operation of nuclear plants and centuries of storing toxic radioactive wastes.

6. A Better Alternative

The U.S. Department of Energy on Jan. 12, 2012⁵ released two groundbreaking information resources on national hydro, wave and tidal energy resources. According to the reports - the most comprehensive of their kind to date - these water power resources, if developed, could supply 1/3 of total U.S. electricity demand by 2030. Hydro, wave and tidal are among the best of the 20 sources in the EROEI analysis I cite, all are greatly superior to nuclear, and all can support base load demand. This is a better path!

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

⁵ www.cleantechnica.com by Andrew Burger