Dear John,

I am extremely disappointed in the Draft of the Disposal Subcommittee's Report to the Full Commission of June 1, 2011. With such a talented staff and outstanding Committee, I had expected a number of things based upon its charge, "provide advice, evaluate alternatives, and make recommendations" for "a new plan" to manage the back end of the nuclear fuel cycle in the United States." (P. I, Draft of the Disposal Subcommittee Report to the Full Commission, June 1, 2011-hereafter BRCDC). What I had hoped to find was:

1. A holistic view of the problem and proposed solutions to it- Yet the first draft publications- BRCDC and Transportation and Storage Subcommittee Report to the Full Commission, May 31, 2011, henceforth, BRCTS- look at the problems in a segmented, sub-optimal viewpoint with no indication how these separate points of view will be brought together in a holistic manner. Further, the reports are overlapping, redundant and in some places contradictory. Two things are needed: a. An introductory chapter explaining how these chapters fit together would be extremely helpful. b. A careful editing is required to make the message clear. There are numerous technical errors such as typos, quotations without clear attribution-source, page numbers, URLs, dates, etc., redundancies, contradictory statements, etc.
2. An examination of the underlying causes of the failure of the program in the US so that what has to be remedied would be clear.

**Comments on the Draft of the Disposal Subcommittee Report to the Full Commission, June 1, 2011**

The pages devoted to the different topics may not be an accurate gauge of the importance of the topics but do give some indication of what the authors thought was important.

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I would argue that some of the chapter headings are misleading and only perpetuate false hopes. Stating THE NEED FOR A PERMANENT DISPOSAL SOLUTION implies that a PERMANENT DISPOSAL SOLUTION is possible. Yet, in the text and all discussions that I am aware of, the impossibility of such an aim

is evident. If a permanent solution could be proved, HOW?- why would we discuss retrieval and reversibility if that were possible? You also state A ***NEW*** APPROACH TO SITING AND DEVELOPING FACILITIES FOR NUCLEAR WASTE MANAGEMENT AND DISPOSAL. Unless, I did not read the report correctly, the approaches recommended had all been recommended previously, many of them in the NAS's **Rethinking High-Level Radioactive Waste Disposal: A Position Statement of the Board on Radioactive Waste Management (1990),** over 20 years ago**.** In the Abstract P. vii-viii it is stated "The Board believes, however, that enough has been learned to formulate an approach that can succeed. The alternative approach emphasizes flexibility: time to assess performance and a willingness to respond to problems as they are found, remediation if things do not turn out as planned and revision of the design and regulations if they are found to impede progress toward the health goal already defined as safe disposal. To succeed, however, this alternative approach will require significant changes in laws and regulations as well as in program management." The problem is how to implement such changes.

One can disagree about what is most important to resolve the present situation but almost all would include a. regaining trust, b. operating in a fair and equitable manner, c. providing security for the hazardous, radioactive and fissile materials and d. limits to knowledge and therefore the uncertainty in the recommendations and e. likelihood of their success in such discussions.

a. Yet, in the report, we find regaining trust is obtained mostly by establishing a new organization and with how it operates.

"A new organization offers the best opportunity to establish—from the outset—the track record of consultation, transparency, accountability, and scientific and technical credibility needed to re-establish trust with the public and key stakeholders. (P. iv BRCDC)

"A second is that transparency and accountability, along with the flexibility to adapt to new information and to the concerns of key constituencies, are essential to sustain public trust in decision-making processes and institutions." (p. v BRCDC)

While such efforts are surely important, there is no discussion in the text of the background, fear of radiation, which lays a foundation of mistrust. Unless that foundation is changed or modified, even the most exemplary of organizations will have a difficult job of gaining the trust of its constituents. This problem is not discussed in the text. Only in P. 63 is "trust ..often the core issue.." mentioned as important.

b. operating in a fair and equitable manner- there is considerable discussion of these topics in the report

c. providing security for the hazardous, radioactive and fissile materials- is discussed in only one third of one page, 77.

d. limits to knowledge and therefore the uncertainty in the recommendations

"What uncertainty does mean is that any rush to impose outcomes—particularly if those outcomes are highly prescriptive and tend to foreclose rather than expand available options—is very prone to fail." (p. 19) makes it sound that if we only wait long enough, then we shall have all or most of the answers when in fact there will always be considerable uncertainty for eons of time. More space is devoted to uncertainty in budgets than uncertainty in knowledge and understanding.

e. likelihood of success

"that moving responsibility to a single purpose organization—outside DOE— offers the best chance for future success." (p. 28) this point is emphasized throughout the document. Only in the very last paragraph of the report is it stated that "The Subcommittee recognizes that none of these three steps will be easy to implement; nor do they, individually or in combination, guarantee success." (p. 81) This affirmation of no guarantee of success is too little and too late.

3. The degree of enthusiasm for the Canadian program throughout the document is misguided. As of a few months ago, April 2011, the state of accomplishments in Canada is exemplified by their documents, including a "SUMMARY REPORT-INITIAL SCREENING FOR SITING A DEEP GEOLOGICAL REPOSITORY FOR CANADA'S USED NUCLEAR FUEL, Township of Ear Falls, Ontario-Submitted to: **Nuclear Waste Management Organization, 22 St. Clair Avenue East, 6th Floor, Toronto, Ontario, M4T 2S3**." In other words, they have not yet even selected a site for a repository.

   A number of countries, including the USA and Canada (From the recommendations of the report of the Environmental Review panel (March 1998) on AECL's nuclear fuel waste management proposal concluded "that the plan for Deep Geological Disposal is technically sound, and that nuclear waste would be safely isolated from the biosphere, but that it remains a socially unacceptable plan in Canada"), were much further along toward opening a repository than are Canada and France today before failure to open a repository.

   The enthusiasm for the French program should also be muted. "ANDRA must present a blueprint for the repository to the government in 2014; if approved by the French National Assembly in 2016, construction would begin the following year. The assembly will then consider licensing the facility to open in 2025." The US program faltered in these later stages.

4. There are a number of important topics that are not even discussed:
   a. Cannot control what the Congress will do on funding, regulation, etc.
   b. Cannot control exogenous effects such as Fukushima Daiichi
   c. Costs and tradeoffs
   d. No discussion of radioactive sources that will eventually need to be put in a repository. No discussion of Greater than Class C wastes that will eventually need to be put in a repository.
   e. Technology is limited to present day technology though research now underway, never mind what we might learn over the next 50-100-1,000 years, could drastically change how we handle spent fuel and high level waste. For example, no discussion is devoted to the 4.5 billion tons of uranium in sea water and how this could impact many aspects of the problem including reprocessing, security, availability of fuel to everyone, etc.
   f. Analyses are limited to present day life styles, medical knowledge, diet, etc. so that outcomes are based on conditions as they are today and not as they might be in the future.
   g. Global warming, no matter what its causes, is not mentioned and how it might impact choices of energy generation, repository types, locations, etc.
   h. There is no discussion of how to or should we try to resolve critical questions such as should wastes be classified by origin or by risk?
   i. There is no discussion of how to or should we try to resolve critical questions such as should regulation be by dose or by risk?
   j. Many discussions are couched in qualitative terms rather than quantitative terms so that different interpretations can be made of the statements. Such statements as

a. "meaningful consultation" P. 63. One can interpret it as one chooses. How is the manager responsible for the program interpret "meaningful consultation" and how is the Congress to interpret "meaningful consultation" when they review the program. b. "Therefore, the process for selecting the organization's leader and senior managers must place highest priority on identifying and recruiting **the absolute best candidates** for the positions."(P.29) (emphasis added) How does one prove who are **the absolute best candidates**?

The report is replete with such statements.

k. The only mention of the1,000,000 year regulatory requirement is on P. 69 in a discussion of the regulations. How can any organization gain trust when they promise to control and regulate over that time period? It also implies that we must be vigilant for that time period because nothing else will change over that time and the waste will be hazardous over that time.

5. Misleading or erroneous statements
   a. On p. 65, it is stated that in contrast to WIPP where DOE "late in the process that DOE relocated its top WIPP management to Carlsbad." They contrast this, in a negative manner, because DOE maintained its headquarters in Las Vegas, nearly 100 miles from the proposed repository. However, the Nye County population in July 2009 was: 44,234 (45% urban, 55% rural): http://www.city-data.com/county/Nye_County-NV.html#ixzz1PLR9qeyD "The population density of counties adjacent to Yucca Mountain is about 0.7 people per square mile (0.4 per square km)(NYE93d)". For comparison, "the population density of the 48 contiguous states is 70.3 persons per square mile (27 per square km). The average population density of Nevada is 10.9 persons per square mile, or 3.1 per square km. The only region in Nye County with a density greater than three people per mile is in the extreme southern portion, in and around the community of Pahrump, which is 60 miles west of Las Vegas (NYE93d). The largest of these communities, Pahrump, is a growing rural community with a 1994 estimated population of 10,892." (p.I-1)

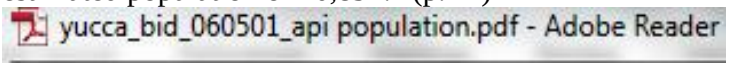
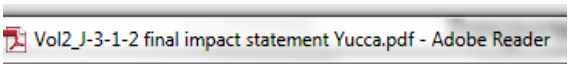





**Table J-33.** Routing characteristics in Nevada for legal-weight truck, rail and heavy-haul truck implementing alternatives.

| Route | County | Distance (kilometers)[a] Urban | Suburban | Rural | Total | Population density (persons per square kilometer) Urban | Suburban | Rural |
|---|---|---|---|---|---|---|---|---|
| *Legal-weight truck route in Nevada using the Las Vegas Beltway* | | | | | | | | |
| Northern route | Clark | 0.0 | 19.9 | 187.5 | 207.4 | 0.0 | 577 | 10.6 |
| Northern route | Nye | 0.0 | 0.0 | 64.7 | 64.7 | 0.0 | 0.0 | 0.0 |
| Southern route | Clark | 0.0 | 41.9 | 126.9 | 168.8 | 0.0 | 577 | 3.5 |
| Southern route | Nye | 0.0 | 0.0 | 64.7 | 64.7 | 0.0 | 0.0 | 0.0 |




Carlsbad, NM Population 26,259 (http://www.city-data.com/city/New-Mexico.html)

Where, with sufficient infrastructure, would you recommend that they should have placed the DOE Yucca headquarters ?

b. "A dose-based or risk-based standard (**the two are essentially equivalent in practice**) that limits the exposure to individuals resulting from radiation releases from the repository;" p. 68 Most Health Physicists or Radiologists would strongly disagree with that statement as the dose value can and has changed as greater scientific understanding is obtained on radioactive material transport in the environment, bioavailability of the radioactive material, bioaccumulation in the body, etc. while the risk limit is a societal judgment.
I strongly recommend that the biological, chemical and medical statements in the report be reviewed by professionals in those disciplines. I do not have the time to document all of the statements on those topics that offended me.

c. "Problems of coordination between EPA and the NRC in developing repository standards have been widely cited as having contributed to negative perceptions of, and loss of confidence in, the Yucca Mountain project. Broadly speaking, however, our examination of the roles of the NRC and EPA, with respect to nuclear waste management under existing law, suggests that while there are opportunities for improvement in the EPA/NRC regulatory process and in the working relationship between these agencies, the general division of roles and responsibilities that currently exists is appropriate and should be preserved." P.61

It should be noted that in a Report by the National Council on Radiation Protection and Measurements (NCRP) they found that the distinction between the 15 and 25 mrems per year regulation for the same situation was meaningless and that the methodology to determine the dose played a far great role in determining the protection required. (I deliberately did not put in the citation so that you can realize the frustration for the reader when such information is not provided, as occurs in many places in the Disposal report.)

## Comments on the Transportation and Storage Subcommittee Report to the Full Commission, (BRCTS) May 31, 2011

I found the BRCTS report much more readable and definitive than the BRCDC report though some of the editorial comments I made there also pertain to this report. For example, in the list of Figures, there is no number 9 and the titles of Figures 8 and 10 are identical. In addition, there is a great deal of redundancy in the report and in what is in the Disposal report. Typos that are important "40 million euro, or about $5.9 million" need to be rectified. (p.55)

However, the major problem is that this report and the Disposal report make differing statements on a number of topics. These need to be reconciled. If the final report of the full committee should ever go to court, then, as in the Discovery process, you would be asked what the right answer is in view of the differing statements by your 2 expert groups.

Additional Comments

a. In general, it is easier to locate new nuclear projects where there are already existing projects. As pointed out in this report DOE has this authority. Yet, perhaps the locations that could fit most of the requirements and that will likely remain in existence are the Nuclear Navy sites. They already have the infrastructure, security and experience in place. I have pointed out the advantages and disadvantages of such locations in my submission to the BRC.

b. The report states that they could not find any sites where dry storage was not possible. My recollection is that in the MRSRC work we found a number of the earlier reactor sites where the space was very limited for dry storage capacity.

c. "This suggests grounds for optimism that a new initiative to find one or more willing hosts for interim storage facilities can succeed." P. 31 A different perspective would be that such sentiments have been expressed frequently in the past-for example with a Negotiator and yet have failed for a variety of reasons.

d. The relationships with local officials cannot be emphasized enough. When the decision was made to locate the MRS in Tennessee, the Governor was not informed in advance. The project might not have succeeded but it was dead on arrival because of this omission.