

Comments on Public Health Assessment Concerning TVA-Kingston Coal Ash Spill

1. Page XVI – 2nd paragraph, 2nd sentence, “There were no **immediate** deaths...,” sounds like there were deaths later as a result of the accident.
2. Page XVI – 3rd paragraph, 2nd sentence, should be, “...spilled across **the** yards of...”
3. Page XVI – 4th paragraph, last sentence, should be “People **farther** from the site...”
4. Page XVII – 1st paragraph, last sentence, should have colon at end of “understand” before listing bullets.
5. Page XXIII – Under Basis for Decision section, 3rd sentence, should be, “At no time, **has** the raw or unfinished water...”
6. Page XXV – Under Basis for Decision section, 4th sentence, should be, “If at any time,...” there is an extra “any” in there.
7. Page XXV – Under Basis for Decision, should selenium be mentioned in paragraph 2, since on page XXXI, it is mentioned that “new data provided by non-governmental organization about selenium in certain fish has signaled the need for further investigation...”?
8. Page XXVI – Under Next Steps section, 2nd sentence is confusing.
9. Page XXXIV – Under Next Steps section, should be “medical” NOT “clinical” toxicologist.
10. Page 1 – 3rd paragraph, 6th sentence, once again, “There were no **immediate** deaths...,” sounds like there were deaths later as a result of the accident.
11. Page 1 – last paragraph, 1st sentence, “...and **the** aquatic habitat...”
12. Page 2 – 2nd paragraph, last sentence, “People **farther** from the site...”
13. Page 3 – 3rd paragraph, 2nd sentence, “...**approximate** 10-mile stretch...”
14. Page 4 – 5th paragraph, 2nd sentence, “...to obtain **baseline** information...”
15. Page 5 – 2nd paragraph, 3rd sentence, “...coal ash itself and our **findings** about the **impacts** of the coal ash...”
16. Page 5 – last paragraph, in the discussion of the routes of exposure, should **consumption of fish** be included as a potential route of exposure?
17. Page 6 – 4th paragraph, 1st sentence, “...contaminants in the **environment** and their...”
18. Page 7 – 1st paragraph, 2nd sentence, “MRLs represent doses that a person could receive without harm for a lifetime.” It’s not clear whether this means that a person could get this dose every day for a lifetime and have no effect, or whether a person could get this dose once and never have an effect during their lifetime.
19. Page 7 – 2nd paragraph, 2nd sentence, “...exposure to a chemical **every day** for 14 days...”
20. Page 7 – 3rd paragraph, 1st sentence, the only comma that is needed in this sentence is the first one
21. Page 7 – 6th paragraph, 2nd sentence, more explanation is needed if the words “slope factors” are to be used.
22. Page 7 – 7th paragraph, 3rd sentence, “This is a cautious way...”
23. Page 7 – 8th paragraph, 1st sentence, This is the first place where the term “chronic EMEG” is used. Are there different values for acute and chronic EMEGs? If so, there needs to be more discussion about the difference between “EMEG” and “chronic EMEG.”

24. Page 8 – 1st full paragraph, 1st sentence, Explain why you used the EMEGs for chronic exposure to children whenever possible.
25. Page 8 – Are the terms “health comparison values” and “health guidance values” interchangeable? If so, I would suggest using only one of the terms.
26. Page 10 – 2nd full paragraph, 2nd sentence, “...(TDEC 2008) **contains** descriptive...”
27. Page 11 – last bullet, “and cleanup **efforts** so we can be...”
28. Page 12 – 2nd paragraph, 2nd sentence, “...in the back of the **document** after the...”
29. Page 12 – last paragraph, last sentence, should be, “...were not much different in KIF coal ash **than** in soil.”
30. Page 13 – 1st paragraph, last sentence, “...implications of the **coal** ash release...”
31. Page 13 – 2nd paragraph, last sentence, real is misspelled (spelled as areal).
32. Page 18 – last paragraph, 4th sentence, explain bioavailable
33. Page 21 – 2nd paragraph, 1st sentence is confusing.
34. Page 21 – 2nd paragraph, 2nd sentence, “...in order to detect **whether there would be** any human health...” “...fish that may have been **affected** by the coal...”
35. Page 21 – 5th paragraph, suggest moving to page 22 between the 2nd and 3rd paragraphs
36. Page 22 – 2nd paragraph, 2nd sentence, “...along an **approximate** 10-mile stretch...”
37. Page 23 – 1st paragraph, 1st sentence, “TVA sampling and analysis **values** for arsenic...”
38. Page 24 – 1st line, delete “**on the**” following the word “points”
39. Page 27 – 2nd paragraph, next to last sentence, “...Watts Bar dam to be **affected** by flow...”
40. Page 27 – last paragraph, last sentence, need comma after January 2, 2009.
41. Page 28 – 1st line, “...water samples at the treatment **plants.**” [or if it was just one plant, specify which one]
42. Page 30 – 1st paragraph, 3rd sentence, “Municipal water treatment **usually** provides clean **surface** water to many households.” [without these distinctions, the sentence doesn’t add to this paragraph]
43. Page 32 – 1st full paragraph, 4th sentence, chemical formulas and names don’t match. CaCO₃ is calcium carbonate, carbonate is CO₃²⁻, bicarbonate is typically written as HCO₃⁻, H₂CO₃ is carbonic acid which does break down into HCO₃⁻.
44. Page 36 – 4th paragraph, 3rd sentence, the NAAQS standard for PM10 (150 µg/m³) in a 24-hour period seems extremely high considering the WHO guideline is only 50 µg/m³ for the same time-frame. Don’t know if this was a typo or not.
45. Page 36 – 4th paragraph, last sentence, [include the annual arithmetic average for PM10, also]
46. Page 37 – 1st full paragraph, 1st sentence, “Because **of** the above...”
47. Page 37 – 2nd full paragraph, last line, delete “those of”
48. Page 38 – 3rd sentence, “...numbered their **locations** as PS05 – PS09...”
49. Page 48 -- table i, in Result cell under date of 1/1-3/10/2009, 1st paragraph, last sentence doesn’t make sense (should be, “The concentrations were within ranges found in U.S. air”).
50. Page 51 – 4th paragraph, 1st sentence, “...PM10 **was** at levels...”
51. Page 52 – 1st paragraph, next to last sentence, “Spraying of the liquid **dust suppression agent** will continue as necessary...”

52. Page 55 – 2nd line, “...5 picocuries per gram **above background** in the top 5...”
53. Page 55 – 2nd line on page spells “picocuries per gram” out while every other reference to picocuries per gram uses symbol (pCi/g).
54. Page 55 – 5th line on page, neither **microoentgens** nor **microoentgens per hour** is defined anywhere on the page or in the glossary at the beginning of the report.
55. Page 55 – 2nd paragraph, last sentence, “...concludes that the **concentration** of radioactive material in the coal ash is...”
56. Page 56 – ½ way down page, 1st bullet, 2nd sentence, should be, “People had **an/the** opportunity...”
57. Page 57 – 1st bullet, “...within 4 miles of the coal ash release **have** not shown...”
58. Page 57 – 1st sentence after the bullets should be rewritten, “The only way people could have been exposed to the coal ash from late December 2008 through the middle of January 2009 was through direct contact with the coal ash or by accidentally eating some of the coal ash.”
59. Page 59 – 1st full paragraph, 2nd sentence, “...leachability rather **than** the EPA...”
60. Page 64 – 2nd paragraph, 4th sentence, “...routinely travel on the **affected** roads.”
61. Page 64 – 5th paragraph, last sentence, “...25% **reported** worsening of headaches,...”
62. Page 70 – 4th paragraph, 2st sentence, “...dust concerns which **appear** to run along...”
63. Page 70 – 4th paragraph, 2nd sentence, “**It also** appears as though there is...”
64. Page 71 – 1st full paragraph, rewrite the 1st sentence, “...greater than 100 µg/m³ **reveals that** only 22% have an unknown cause.”
65. Page 75 – under 10c, 4th paragraph, 4th sentence doesn’t make sense.
66. Page 75 – under 10c, 5th paragraph, 1st sentence should be, “...except for two samples of arsenic that **were** slightly...”
67. Page 80 - #6, 2nd sentence, [remove the 1st **any**], it should read, “if at any time,...”
68. Page 80 - #8, end of the 1st line, [remove the word **is**], it should read, “...site of the coal ash release as fast as...”
69. Page 80 - #8, 2nd sentence, “...Emory and Clinch rivers to make sure **they remain** safe for...”
70. Page 80 – rewrite this bullet, recommend the following, “Since no air measurements were obtained during the time period between December 22 and December 27, 2008, it is not possible to know what the air conditions were during this time. During this time, all emergency operations were aimed at protecting the public from the released coal ash, and dealing with emergency situations created by derailed trains, ruptured gas lines, destroyed homes and destroyed roads. The U.S. Environmental Protection Agency, the Tennessee Valley Authority, and the Tennessee Department of Environment and Conservation began taking air samples by December 27, 2008.
71. Page 191 – 2nd full paragraph, last line, “...used for inhalation (breathing) exposure **to** the chemical...” [added the word “to” and moved the word (breathing)]
72. Page 191 – last line on page, “...line predicting **an** extra cancer per unit...”
73. Page 192 – 1st full paragraph, 2nd sentence, “...one excess cancer **risk** in 1,000,000 people...”
74. Page 195 – 1st full paragraph, 4th sentence, “The level representing **one** excess cancer...”

75. Page 195 – 2nd full paragraph, 1st sentence, “...in Georgia (0.002 to 0.003 µg/m³) for comparison...”

Global comments:

1. Data is used as singular and plural throughout. One convention should be chosen.
2. Vanderbilt prefers the term “**medical toxicologist**” to clinical toxicologist”

7. Page XXV – Under Basis for Decision, should selenium be mentioned in paragraph 2, since on page XXXI, it is mentioned that “new data provided by non-governmental organization about selenium in certain fish has signaled the need for further investigation...”? [I did not add anything here, but clarified conclusion 13.](#)

23. Page 7 – 8th paragraph, 1st sentence, This is the first place where the term “chronic EMEG” is used. Are there different values for acute and chronic EMEGs? If so, there needs to be more discussion about the difference between “EMEG” and “chronic EMEG.” [Was discussed in 2 paragraphs farther up this page.](#)

31. Page 13 – 2nd paragraph, last sentence, real is misspelled (spelled as areal). [This is the correct word, an adjective to express an extent that is a one-dimensional area within boundaries.](#)

34. Page 21 – 2nd paragraph, 2nd sentence, “...in order to detect **whether there would be** any human health...” “...fish that may have been **affected** by the coal...” [reworded to clarify the original intent of the sentence.](#)

42. Page 30 – 1st paragraph, 3rd sentence, “Municipal water treatment **usually** provides clean **surface** water to many households.” [without these distinctions, the sentence doesn’t add to this paragraph] [clarified that municipal water is from surface or ground water, but it is treated.](#)

45. Page 36 – 4th paragraph, 3rd sentence, the NAAQS standard for PM10 (150 µg/m³) in a 24-hour period seems extremely high considering the WHO guideline is only 50 µg/m³ for the same time-frame. Don’t know if this was a typo or not. [Clarified that there is no annual average for PM10.](#)

72. Page 191 – last line on page, “...line predicting ~~an~~ extra cancer per unit...” [really meant an. Use of one would be better.](#)