



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

September 17, 2010

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Unit 2
NRC Docket No. 50-391

**Subject: WATTS BAR NUCLEAR PLANT (WBN) UNIT 2 – Response to NRC
REQUEST FOR ADDITIONAL INFORMATION REGARDING SEVERE
ACCIDENT MANAGEMENT ALTERNATIVES SECPOP2000 ERRORS
(TAC NO. MD8203)**

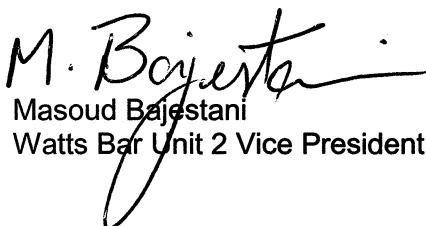
- References:
1. NRC letter dated November 30, 2009, "Watts Bar Nuclear Plant, Unit 2 – Request for Additional Information Regarding Severe Accident Management Alternatives (TAC NO. MD8203)" (ML092230024)
 2. TVA letter dated July 23, 2010, "Watts Bar Nuclear Plant, Unit 2 – Request for Additional Information Regarding Severe Accident Management Alternatives (TAC NO. MD8203)" (ML102100588)

The purpose of this letter is to provide additional responses to the NRC request for additional information regarding the Severe Accident Management Alternatives (SAMA) (Reference 1) committed to in the TVA WBN Unit 2 letter submitted to the NRC (Reference 2). The Enclosure provides the previous commitment description and TVA's responses.

There are no new commitments made in this submittal.

If you have any questions, please contact me at (423) 365-2351.

Sincerely,


Masoud Bajestani
Watts Bar Unit 2 Vice President

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Responses to NRC Request for Additional Information

cc (Enclosure):

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Enclosure

Response to NRC Request for Additional Information Regarding SAMA

TVA Commitment

In response (Reference 2) to NRC request for additional information (RAI) 4.b and 4.c, TVA is evaluating the impact of the SECPOP2000 errors and will provide an update.

TVA Response to RAI 4.b

In the previously submitted analysis, SECPOP Version 3.12 was used. This version had not been corrected for the errors noted. Therefore, in response to this request, SECPOP2000 Version 3.13.1 was used to again produce the economic data for the Site Data File for WBN. This version uses the 2002 National Census of Agriculture data. In the new analysis, an economic factor of 1.15154 was applied in the input to SECPOP2000 Version 3.13.1 to account for inflation from 2002 to 2007. This was determined using the United States Department of Labor Bureau of Labor Statistics online "CPI Inflation Calculator" (http://www.bls.gov/data/inflation_calculator.htm) using an input amount of \$1000, a start year of 2002, and an end year of 2007. Table 8 shows the original results, the results with the new Site Data File, and the percent change. The results for a new release category involving core damage with at most a small, pre-existing hole in the containment are also shown for completeness.

TVA Response to RAI 4.c

This version uses the 2002 National Census of Agriculture data. In the previously submitted analysis, the generic values for crop season and share section of the Site Data File were used. In response to this request, SECPOP2000 Version 3.13.1 generic values were replaced. The crop share is the fraction of the area that is devoted to each of seven crop types: pasture, stored forage, grains, green leafy vegetables, legumes and seeds, roots and tubers, and others. Because most of the deposition (and related measures such as interdicted area) are within 10 miles of the plant, the crop share was computed for the closest 10 miles to the plant. This was estimated by visual examination to be 50% within Rhea County, 40% within Meigs County, and 10% within McMinn County. The United States Department of Agriculture 2007 Agricultural Census tables 8, 25 and 30 were used to estimate the total area in each county in farms and the area in each county used for each of the crops listed in these tables, if any. The crops were grouped into the seven crop categories used by the code, and each of these areas was divided by the total farm area in that county to determine the fraction of crop area in that county used for each food category. These fractions were weighted by the estimated area within ten miles of WBN in each county and used to replace the generic SECPOP2000 values in the site file. The crop season for all crops was taken from several online sources as March 25 through November 5, or day 84 through day 309. This is the average time from the last frost of spring to the first frost of autumn. The changes in release category consequences as a result of these changes are shown in revised Table 8.

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Response to NRC Request for Additional Information Regarding SAMA

Updated Table 8 Severe Accident Risks

| Release Category | Original Results | | New Site File | | Percent Change | |
|------------------|-----------------------|-------------------|-----------------------|-------------------|----------------|---------------|
| | Total Dose person-rem | Economic Cost, \$ | Total Dose person-rem | Economic Cost, \$ | Total Dose | Economic Cost |
| I (Early) | 2.19E+06 | 4.45E+09 | 2.16E+06 | 4.85E+09 | -1.37% | 8.99% |
| II (Bypass) | 3.42E+06 | 8.11E+09 | 3.32E+06 | 9.56E+09 | -2.92% | 17.88% |
| III (Late) | 1.16E+06 | 1.78E+09 | 1.13E+06 | 1.92E+09 | -2.59% | 7.87% |
| IV (small hole) | N/A | N/A | 1.48E+05 | 7.16E+07 | N/A | N/A |