Question 301.1

Please resolve the apparent inconsistency regarding proposed finding No. 28.

a. On p. 2.4-3 of the SSR, the maximum historic flood of record in the vicinity of the site is given as 593.9 feet above MSL, but Table 2.4-4 on p. 2.4-43 of the SSR gives the value as 591.14 feet above MSL.

b. Table 2.4-2 on p. 2.4-41 of the SSR indicates that the peak discharge for the Mississippi River at Clinton, Iowa occurred on 4/28/65 at river mile 511.8. On p. 2.4-43 the peak discharge is shown to have occurred on 4/27/65 at river mile 518.0.

Response

a. The maximum historic flood at river mile 518.0 is 591.14 feet above MSL, as indicated on Table 2.4-4. This is based on an actual reading taken at the closest gauging station downstream from the proposed Carroll County Station river screen house. The maximum historic flood was calculated to be 593.9 feet above MSL at the proposed screen house and so noted on Figure 2.4-5 as being at river mile 530.

b. The data in Table 2.4-2 which indicates that the peak discharge on April 28, 1965 at Clinton, Iowa, river mile 511.8, was obtained from the U.S. G.S. gauging station. The flood level data indicated on Table 2.4-4 which indicates a peak discharge on April 27, 1965, at river mile 518.0 is based on Corps of Engineers measurements.

These data are not inconsistant in that in a) the maximum historic flood level at the Carroll County screen house at river mile 530, must be higher because it is upstream of the gauging station at river mile 518, and in b) the crest of the maximum historic flood was at river mile 518 on April 27, 1965 and the following day it was at river mile 511.8, which is 6.2 miles downstream. Data was used from the two gauging stations because neither one had a complete set of data.

Question 312.1

The analyses presented indicate that the probability of an aircraft crash leading to radiological consequences in excess of 10 CFR Part 100 is in excess of the staff's acceptance criteria, as given in Standard Review Plan Section 2.2.3. The staff criteria indicate that an event should be made a design basis event if the probability is realistically estimated to be in excess of about 10^{-7} per year.

In view of the considerable uncertainty regarding growth of future air traffic near the Stransky air port as well as other uncertainties, such as the future rate of air crash statistics, we cannot concur in your conclusion that no design basis aircraft is required.

Therefore, we believe it to be prudent that you propose an aircraft of a selected weight and speed that will be incorporated into the plant design basis, such that aircraft impacts more damaging than this design basis impact be less probable than 10^{-7} per year.

Response

The analysis contained in Section 2.2.3.1.7, Part(a), results in a final probability for releases in excess of 10 CFR Part 100 of 1.7×10^{-7}. This analysis is very conservative in that it assumes that any damage to a relevant safety related structure by an aircraft impact automatically results in releases in excess of 10 CFR Part 100. It is realistic to assign a further probability as to the releases that would result from such damage. As an example, by assigning a probability of 0.2 that single engine aircraft impact that would damage the Fuel Building would also damage internal targets such as the fuel pool, we can show that the probability of releases would be a more realistic 6×10^{-8}. Even this value has a degree of conservatism since it assumes anything which impacts the fuel pools results in releases in excess of 10 CFR Part 100. Similar considerations, if applied to twin engine aircraft crashes, would lower the probability even further.

Therefore, the realistic probability of aircraft accidents leading to such releases is so low that no design basis aircraft is required for the Carroll County Site.