

DRAFT Response to:

Public comment #33: How did the staff come up with the factor of 100 reduction in the failure rate for heavy load drops for single-failure-proof cranes?

For a non-single-failure proof handling system, the median probability of a loss-of-inventory was estimated based on NUREG-0612. In NUREG-0612, an alternate fault tree (Figure B-2, page B-16) was used to estimate the probability of exceeding the release guidelines (loss-of-inventory) for a non-single failure proof system. The mean value was estimated to be about 2.1×10^{-5} per year when corrected for the new Navy data and 100 lifts per year. A comparison of this mean value to the 2.0×10^{-7} per year mean value for the single-failure-proof crane shows a factor of 100 reduction.

B145

Response to:

Public comment #8: The risk assessment should take into account changes in local aircraft traffic when evaluating the probability and consequences from aircraft crashing into SFPs.

A decommission plant will continue to be governed by 10 CFR Part 50 for the evaluation of hazards as discussed in SRP 2.2.3, "Evaluation of Potential Accidents," including accidents involving nearby industrial, military and transportation facilities. Changed in local aircraft traffic would continued to be assessed.

The frequency of an aircraft crash leading to an accident in a spent fuel pool was estimated to be in the range of 9.6×10^{-12} to 4.3×10^{-8} per year for significant damage to the pool resulting in a loss of water from the pool. The mean value was estimated to be 2.9×10^{-9} per year. These values are a small fraction of the overall risk for the loss of water from the pool at a decommissioned plant which was estimated to be on the order of 3.0×10^{-6} per year (point estimate). An aircraft crash resulting in damage to a support system, with a mean value of 7.0×10^{-7} per year without consideration of recovery actions, was found to be bounded by other more probable events.

It is unlikely that changes to aircraft traffic near a decommissioned plant will significant increase the estimated risk from crashes. Further, changes in aircraft traffic would continued to be assessed at a decommissioning plant.

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Public comment #8: The risk assessment should take into account changes in local aircraft traffic when evaluating the probability and consequences from aircraft crashing into SFPs.

A decommission plant will continue to be governed by 10 CFR Part 50 for the evaluation of hazards as discussed in SRP 2.2.3, "Evaluation of Potential Accidents," including accidents involving nearby industrial, military and transportation facilities. These evaluations are performed for projected activities at the end-of-license for the plant. Changed in local aircraft traffic would continued to be assessed at a decommissioning plant and a reassessment of risk would be performed as needed.

The frequency of an aircraft crash leading to an accident in a spent fuel pool was estimated to be in the range of 9.6×10^{-12} to 4.3×10^{-8} per year for significant damage to the pool resulting in a loss of water from the pool. The mean value was estimated to be 2.9×10^{-9} per year. These values are a small fraction of the overall risk for the loss of water from the pool at a decommissioned plant which was estimated to be on the order of 3.0×10^{-6} per year (point estimate). An aircraft crash resulting in damage to a spent fuel pool support system, with a mean value of 7.0×10^{-7} per year without consideration of recovery actions, was found to be bounded by other more probable events.

Aircraft traffic and accident data were reviewed (Ref: "Data Development Technical Support Document for the Aircraft Crash Risk Analysis Methodology (ACRAM) Standard," C.Y. Kimura, et al., UCRL-ID-124837, Lawrence Livermore National Laboratory, August 1, 1996). The number of U.S. Air Carrier operations increased from about 5.5 million departures per year in the 1970s to about 8.7 million departures per year in the mid-1990s. The average miles traveled per departure increase from about 500 to 650. For the period from 1986 to 1993 general aviation operations remained relatively constant, with a decrease in activities reported in 1992 and 1993. Military aircraft data, which is a small fraction of the total risk (see Table A2d-1, "Generic Aircraft Data"), was not reviewed.

It is unlikely that changes to aircraft traffic near a decommissioned plant will significant increase the estimated risk from crashes. Further, changes in aircraft traffic would continued to be assessed at a decommissioning plant.

SPSB DRAFT Response to:

Public comment #8: The risk assessment should take into account changes in local aircraft traffic when evaluating the probability and consequences from aircraft crashing into SFPs.

A decommission plant will continue to be governed by 10 CFR Part 50 for the evaluation of hazards as discussed in SRP 2.2.3, "Evaluation of Potential Accidents," including accidents involving nearby industrial, military and transportation facilities. Changes in local aircraft traffic would continued to be assessed at a decommissioning plant and a reassessment of risk would be performed as needed.

The frequency of an aircraft crash leading to an accident in a spent fuel pool was estimated to be in the range of 9.6×10^{-12} to 4.3×10^{-8} per year for significant damage to the pool resulting in a rapid loss of water from the pool. The mean value was estimated to be 2.9×10^{-9} per year. These values are a small fraction of the overall risk of uncovering the spent fuel in the pool at a decommissioned plant which was estimated to be on the order of 3.0×10^{-6} per year (point estimate). An aircraft crash could also resulting in damage to a spent fuel pool support system. The estimated range of striking a support system was estimated to be in the 1.0×10^{-9} to 1.0×10^{-5} per year range, with a mean value of 7.0×10^{-7} per year, without consideration of recovery actions. These values are also a small fraction of the estimated probabilities for the loss of cooling initiator (3.0×10^{-3} per year), the internal fire initiator (3.0×10^{-3} per year), or the loss of inventory initiator (1.0×10^{-3} per year).

Aircraft traffic and accident data were reviewed by the staff (Ref: "Data Development Technical Support Document for the Aircraft Crash Risk Analysis Methodology (ACRAM) Standard," C.Y. Kimura, et al., UCRL-ID-124837, Lawrence Livermore National Laboratory, August 1, 1996). The number of U.S. Air Carrier operations increased from about 5.5 million departures per year in the 1970s to about 8.7 million departures per year in the mid-1990s. The average miles traveled per departure increase from about 500 to 650. For the period from 1986 to 1993 general aviation operations remained relatively constant, with a decrease in activities reported in 1992 and 1993. Military aircraft data, which are a small fraction of the total risk (see Table A2d-1, "Generic Aircraft Data"), was not reviewed.

It is unlikely that changes to aircraft traffic near a decommissioned plant will significant increase the estimated risk of uncovering the spent fuel in the pool. Further, changes in aircraft traffic would continued to be assessed at a decommissioning plant.