



Application of LIFESim Computer Model to the Hurricane Katrina Disaster

Owner: U.S. Army Corps of Engineers, Paul Scodari, IWR
Location: New Orleans, Louisiana

LIFESim is a modular, spatially-distributed, dynamic simulation system for estimating potential life loss from natural and dam and levee failure floods. LIFESim can be used for dam safety risk assessment and to explore options by dam owners and local authority emergency managers for improving the effectiveness of emergency planning and response. LIFESim was developed at Utah State University under the supervision of Professor David Bowles. The program was sponsored by the U.S. Army Corps of Engineers (USACE), the Australian National Committee on Large Dams, and the U.S. Bureau of Reclamation.

Gannett Fleming used the LIFESim model to estimate fatalities resulting from Hurricane Katrina in the Greater New Orleans for two purposes: first, as a forensic investigation tool to identify the reason for the occurrence of fatalities and, second, as a predictive tool to analyze effects of future hurricane and flooding events under different levels of protection.

Our firm's role included calibration of LIFESim model to closely simulate the actual event. A series of simulations was performed to evaluate the expected response of suggested protection plans under variable hurricane and flooding scenarios. The results of the LIFESim modeling were used for risk assessment studies.

This work received the following commendations:

- **"Patriotic Civilian Service Award"** – Presented by the Department of the Army for the commitment during the period of completion of the final nine-volume report for the Interagency Performance Evaluation Task Force (IPET) following the aftermath of hurricanes Katrina and Rita.
- **"National Award of Merit"** – Awarded by USACE Engineers and the IPET for contributions to the reconstitution efforts in the New Orleans area following Hurricane Katrina.
- **"Certificate of Achievement Awarded to IWR Team of the Year"** – Presented by the Institute of Water Resources, Department of the Army.

KEY STAFF

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DISCIPLINES

**Hydraulic and Hydrologic
Modeling**

