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Corps Addresses Safety Concerns of ASCE's External Review Panel, Comments on IPET's Draft Report on Performance of New Orleans Hurricane Protection System

By Mark Fitzgerald

Responding to the letter that ASCE's External Review Panel (ERP) sent to the U.S. Army Corps of Engineers on March 24 (see April issue of *ASCE News*), Major General Don T. Riley, P.E., M.ASCE, the Corps's director of civil works, stated that the Corps respected ASCE's voice and leadership in matters of national infrastructure and was committed to a careful evaluation of the hurricane protection system in New Orleans—particularly in how the design, construction, and maintenance of the 17th Street Canal floodwall may have contributed to its failure last year. At the behest of Secretary of Defense Donald H. Rumsfeld, the Society established the ERP to peer-review the work of the Interagency Performance Evaluation Task Force (IPET)—the body commissioned by the Corps to review the performance of the hurricane protection system in New Orleans and southeastern Louisiana.

“As professional engineers and public servants we are entrusted with protecting the public's health, safety, and welfare, and we must hold ourselves to the highest standard,” stated Riley on behalf of the Corps in a letter dated June 5. “The Corps is

committed to determining how and what happened and to apply these lessons in evaluating and upgrading other Corps flood and hurricane protection systems across the nation. Presently, we are reassessing the stability of the entire floodwall levee system in southeast Louisiana based on the lessons learned from the IPET investigation. In addition, we are initiating efforts to reassess I-walls used in other levee projects and to identify the policy and criteria that need updating to account for these lessons and other advances in design and construction practices.”

Riley went on to address five specific actions that the ERP recommended that the Corps undertake for levees and floodwalls in New Orleans and southeastern Louisiana. “We have developed specific guidance to reevaluate the I-walls in New Orleans for current design loadings,” he stated. “In addition, we are drafting directions to the districts on appropriate efforts to reevaluate such walls in other projects. As part of reevaluating the I-walls, we are reassessing the global stability of the levees based upon on-going geotechnical site investigations. We are developing specific guidance for T-walls concurrent with the above guidance developed for I-walls.”

The Corps is also aware, according to Riley, that it needs to advance from a practice that uses the Standard Project Hurricane (SPH), and it is currently working to provide a risk-based approach to project design. Riley also noted that the Corps is in the process of establishing an interagency team that will collaborate to define an engineering model of hurricanes based on the work completed as part of the IPET investigation. In addition, he assured the ERP that all of the Corps’s project designs would continue to be independently reviewed.

On June 1 the IPET issued its final draft report on the status of its investigation of the New Orleans hurricane protection system. “The system did not perform as a system: the hurricane protection in New Orleans and southeast Louisiana was a system in name only,” stated the draft, which amounted to over 6,100 pages. “The system’s performance was compromised by the incompleteness of the system, the inconsistency in levels of protection, and the lack of redundancy. Incomplete sections of the system resulted in sections with lower protective elevations or transitions between types and levels of protection that were weak spots. Inconsistent levels of protection were caused by differences in the quality of materials used in levees, differences in the conservativeness

of floodwall designs, and variations in structure protective elevations due to subsidence and construction below the design intent due to error in interpretation of datums.”

According to Lieutenant General Carl A. Strock, P.E., M.ASCE, the Corps’s commander and chief of engineers, the report indicates that the Corps overlooked aspects in the design of the floodwalls and did not anticipate how the floodwalls would fail when high levels of water surged against them. “It’s not about confessions, it was about analytics that led us to conclusions about what occurred,” he told *The New York Times* on the day the draft report was released. “It is what it is. Call it a mea culpa, or call it a dry recognition, or admission, or whatever—but we’re not ducking our accountability and responsibility in this.”

On June 9 the ERP sent a letter to Strock commending the IPET’s effort in evaluating the performance of the hurricane protection system in New Orleans and southeastern Louisiana. “In general, the ERP is very satisfied with the IPET’s work and with its progress,” the letter stated. “We are impressed with the detailed analyses of wind and surge from Hurricane Katrina, with the work performed to define a vertical datum and benchmarks, and with the in-depth assessment of the causes of the breaches at the 17th Street and London Avenue canals. The IPET contributions are comprehensive and definitive. The work plan was ambitious, so much so that it was not feasible for every aspect of the work to reach the desired level of completeness by June 1, 2006. Some IPET-originated work tasks should therefore be continued even though the final draft report was submitted on June 1, 2006. Indeed, these tasks may require continuous assessment as conditions change.”