



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160-0267

**APR 01 2013**

CEMVN-ED-E

MEMORANDUM FOR Commander, Mississippi Valley Division (CEMVD-PD-N/  
Stephen M. Stuart)

SUBJECT: Independent External Peer Review (IEPR) of Geotechnical Report and Plans and Specifications for Greater New Orleans Hurricane and Storm Damage Risk Reduction System WBV-14e.2 – V-Line Levee, East of Vertex – Phase 2.

1. This memo summarizes the IEPR process and conclusions for WBV-14e.2 V-Line Levee, East of Vertex – Phase 2 levee project. As an integral part of the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS), WBV-14e.2 was designed and constructed to provide risk reduction from storm conditions that have a 1% chance of occurring each year. The IEPR panel members agreed that the levee design documentation is sufficient to provide a level of safety assurance for the engineering aspects of the project.
2. The WBV-14e.2 levee is located in Jefferson Parish on the West Bank of the Mississippi River. This section of levee runs along the West side the Bayou Aux Carpes 404c Wetland Area. This contract involved raising the elevation of approximately 3.5 miles of existing earthen levee South from Old Estelle Pumping Station to the intersection of the levee and Highway 45. The earthen levee has a 10 foot wide crown with a 2011 design elevation of +13.0 to +14.0 NAVD88 (2004.65) and 1 vertical on 4 horizontal side slopes. Construction also included the installation of sheet pile along some segments.
3. The IEPR was conducted by Battelle Memorial Institute. The reviewers reviewed both the Geotechnical Report for the project as well as the Plans and Specifications. Four comments were submitted for the Geotechnical Report and three comments for the Plans and Specifications. The review team also reviewed but did not comment on several supporting documents.
4. The IEPR panel members agreed that the WBV-14e.2 project documents contained sufficient design-engineering information to provide a level of safety assurance for the engineering aspects of the project. The panel also recommended that three project elements/reviews be considered to ensure safety for ongoing construction and for the future levee lift for the WBV-14e.2 project.
  - a. Armoring design – Reviewers noted the issue of removal of turf and replacement of turf for future levee raises and its impact on armoring. The USACE PDT explained that future lift schedules and system armoring are currently being developed and will be performed under separate contracts. The panel concurred with this and suggested that future IEPRs be provided with future levee lift information as well as any armoring plans. USACE concurs with the

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comment. Armoring requirements for the entire HSDRRS are being researched by a special team at this time. The resulting Armoring Manual will undergo an IEPR using the same process as the WBV-14e.2 review. That review is scheduled to begin this calendar year.

b. Interface with WBV-33 – The panel suggested that the transition between WBV-14e.2 and WBV-33 be reviewed by the designers of WBV-33. USACE concurs with the comment. Transitions between adjacent projects present a particular challenge. The goal to provide a system that functions as a system cannot be compromised. The primary design responsibilities of a wall-to-levee transition fall to the wall designer. Plans and specifications for walls will include a short length of levee where the wall-to-levee transition occurs. Typical details of this wall-to-levee transition are provided on the levee plans for information only. The IEPR reviewers' concern for the transition from WBV-14e.2 to WBV-33 is being fully addressed as a result.

c. Monitor levee settlement – The panel suggest that a more accurate settlement analysis could be performed using the loading data from the Phase 1 levee raise, surveys performed after completion of construction for the Phase 1 project, and the existing consolidation testing data. This data could be used to provide more accurate settlement estimates for the Phase 2 work. USACE concurs with the comment. The Phase 2 design could have potentially taken advantage of consolidation of underlying soils that occurred as a result of Phase 1 work. However, due to the fast pace of design and construction, the more conservative settlement curves from the original geotechnical analysis were used. As future lifts are planned, USACE will certainly conduct new geotechnical field studies to most effectively and economically provide the authorized level of risk reduction.

d. Basis of design – 1% report established required levee elevations and design guidelines as established per the threshold. HSDRRS guidelines established levee analysis requirements: loading, factor of safety and design methodology. Also note that each underwent IEPR prior to being utilized for WBV-14e.2.

e. Unit weight of water load – One panel member expressed concern over unit weight of 62.4 PCF for fresh water, used in stability analysis. Using a higher weight of 64 pcf for salt water does not compromise design factor of safety (FOS), or lower below required FOS.

5. The IEPR of WBV-14e.2 was conducted as required, and in accordance with, all applicable laws and USACE regulations. Without a doubt, the constructive critiques and positive recommendations of the peer reviewers have resulted in an improved level of safety assurance. This memo closes out the action on the Independent External Peer Review Process.

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6. The CEMVN-ED-E point of contact for this effort is Randy Perrin, 504-862-2436. The CEMVN project manager is John Templeton, 504-862-1021.

  
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