



National Transportation Safety Board

Independent Peer Review of Complex Bridge Design

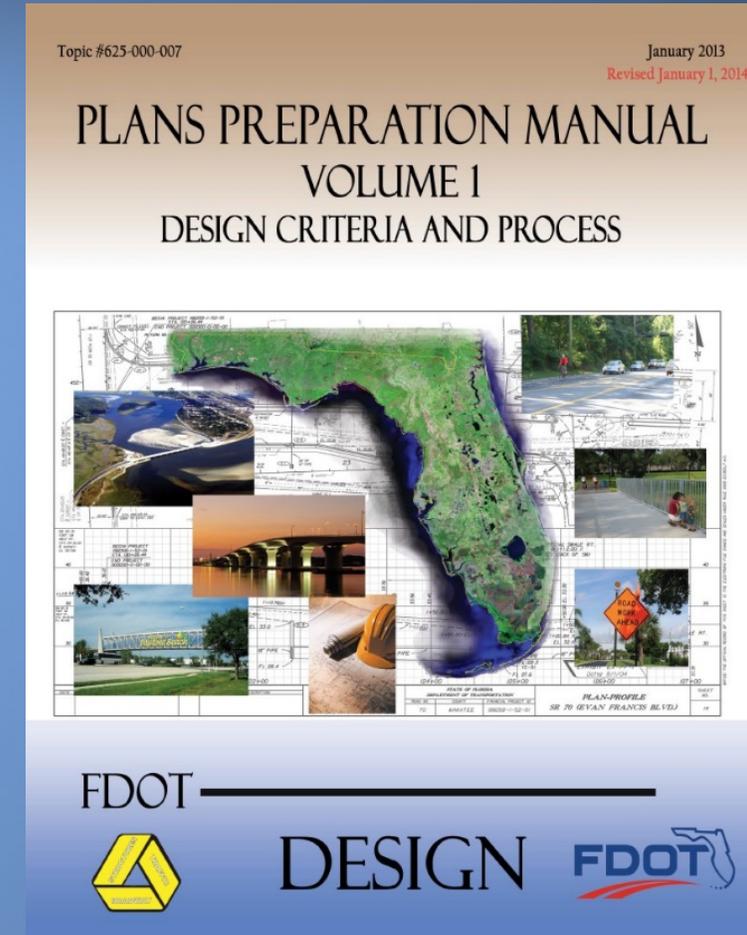
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Overview

- FDOT requirements for independent peer review
- Louis Berger's lack of qualification to conduct peer review and incomplete review
- Inadequate FDOT oversight of peer review process

FDOT Requirements for Peer Review

- Independent firm must:
 - Be prequalified for complex, concrete bridge design (work type 4.3.1)
 - Have FDOT prequalification letter specific to each work type
 - Have at least 3 professional engineers on staff with minimum 5 years each of complex concrete bridge design experience
- Review firm cannot have any involvement with design project



FIU Bridge Independent Peer Review Process

- FIGG's technical proposal stated peer review was to be performed by different office within FIGG
- FDOT required outside firm with no involvement
- FIGG then hired Louis Berger
- FDOT peer review was to be a comprehensive, thorough, and independent verification of design
 - Not a simple check of original plans and calculations

Louis Berger Peer Review

- Louis Berger not qualified for FIU bridge review
 - Applied in 2013; FDOT did not approve the application
 - Never prequalified by FDOT for 4.3.1 work type
- FDOT website erroneously listed Louis Berger as prequalified
 - Postcollapse, FDOT identified technical error
 - Stated FDOT website is for informational purposes only

Quality of Louis Berger Peer Review

- Louis Berger analyzed overall bridge structure
 - Did not analyze different stages of construction and nodal areas
 - Exceeded budget and required additional time
- FIGG initially failed to provide for FDOT-required independent peer review
- Louis Berger did not identify significant under-design of bridge, and under-design led to structural failure and bridge collapse

FDOT Oversight of Independent Peer Review

- FDOT requires peer review firms to—
 - Certify bridge design at 90% plan submittal
 - Certify, sign, and seal bridge design at 100% plan submittal
- FDOT did not require 90% certification for FIU bridge
 - Missed critical step in oversight
- FDOT failed to identify that Louis Berger was unqualified for independent peer review of FIU bridge project design

Summary

- Louis Berger not qualified to perform the review
- FIGG's failure to adhere to FDOT requirements resulted in Louis Berger's inadequate peer review
- Louis Berger failed both to perform a comprehensive peer review and to identify significant design errors
- FDOT did not recognize Louis Berger as unqualified to certify, sign, and seal review of FIU bridge plans