The following figures, Figures 2.4.6-263 through 2.4.6-292, will be added to the FSAR Subsection 2.4.6 in a future revision of the COLA.

Figure 2.4.6-263. Outline of maximum credible submarine slide above the Florida Escarpment, developed from multibeam bathymetric data (Source: Reference 239).

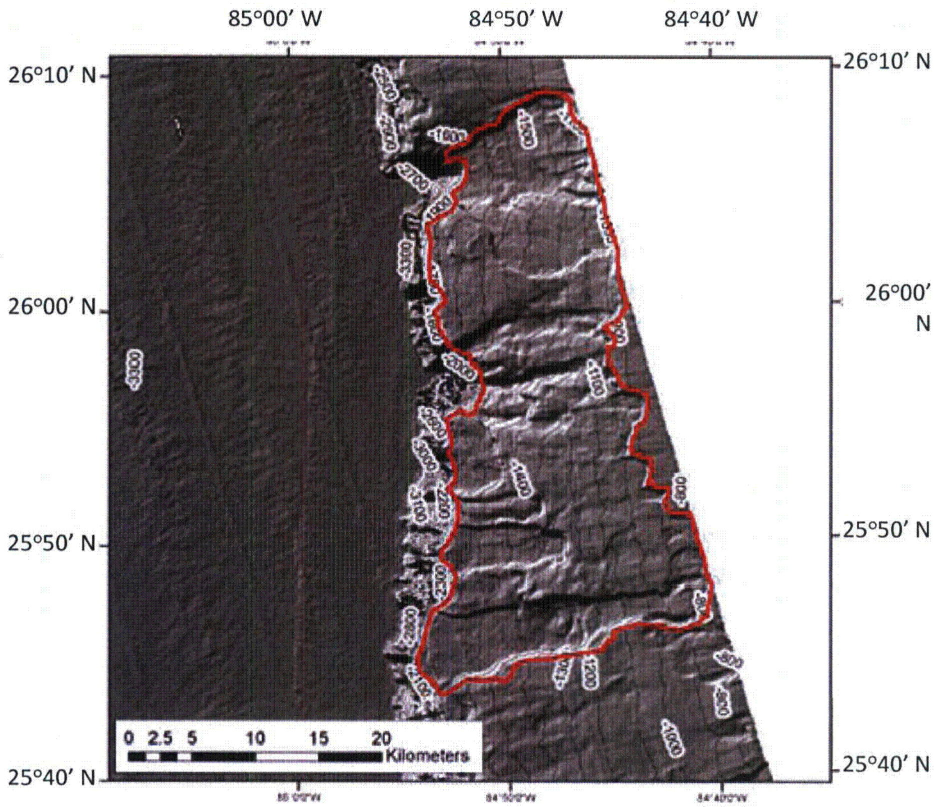


Figure 2.4.6-264. Approximation of the maximum credible submarine slide above the Florida Escarpment with an ellipse. (Source of bathymetry: Reference 239).

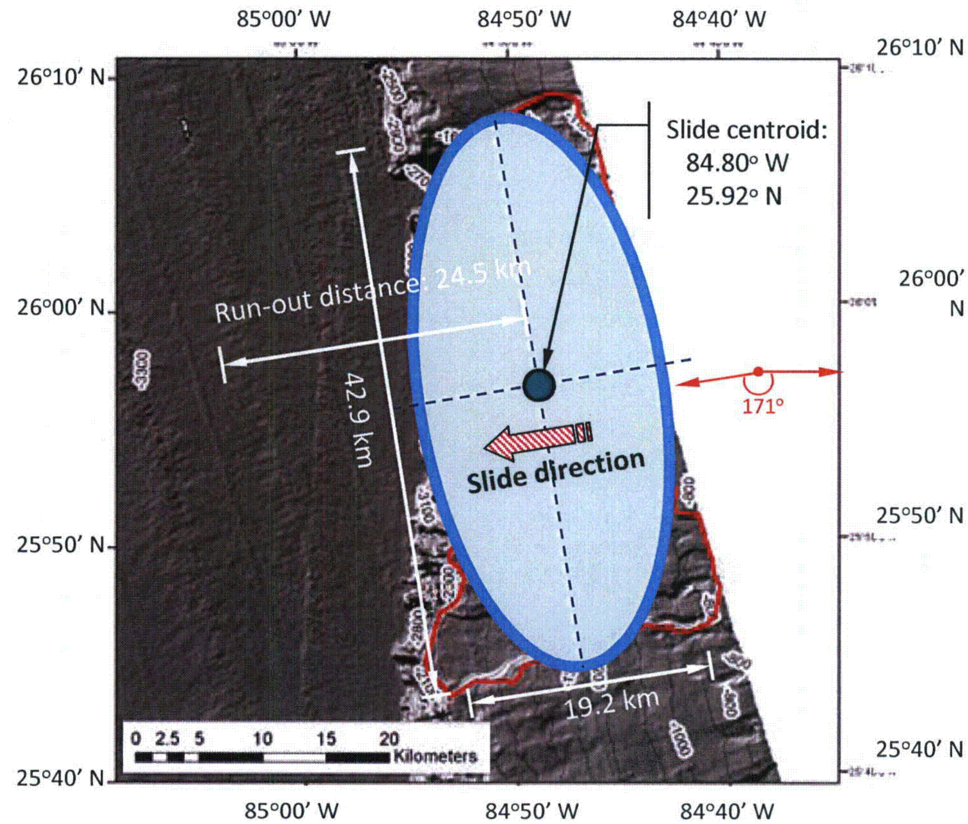


Figure 2.4.6-265. Model domain and bathymetry in the three nested grids used in the FUNWAVE simulations. Colors in elevation legend represent water depths relative to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

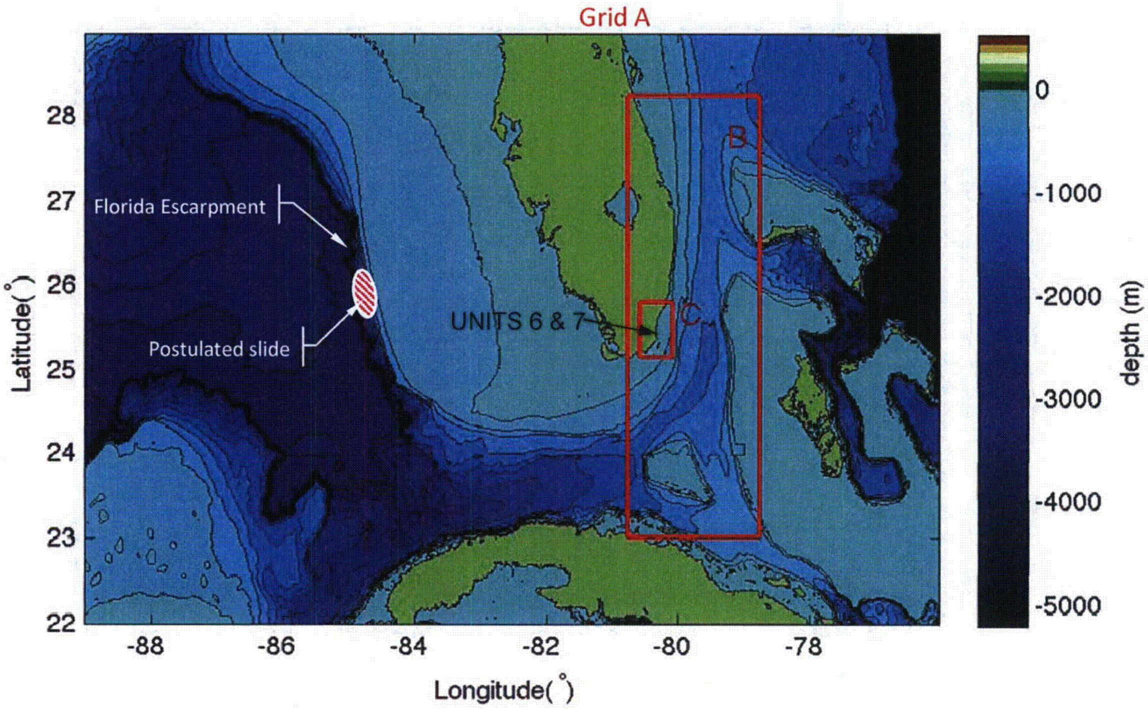


Figure 2.4.6-266. Location and lateral extent of the postulated submarine mass failure for the Florida Escarpment slide simulations and local bathymetry. Colors in elevation legend represent water depths relative to MLW (Source: Reference 246).

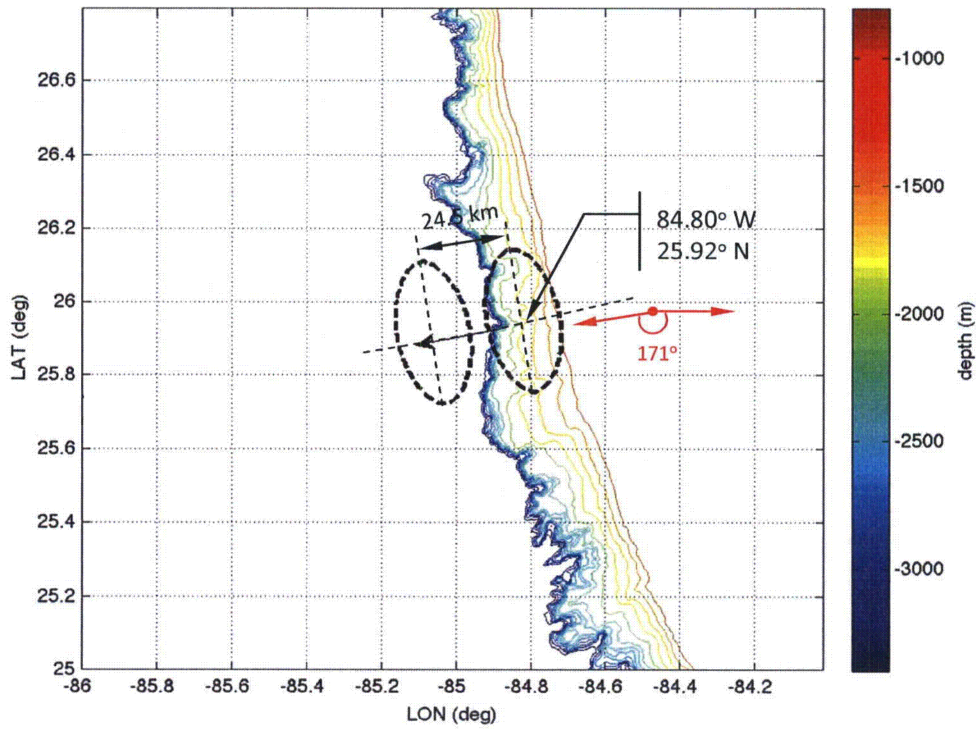


Figure 2.4.6-267. Initial wave generated by NHWAVE (dynamic source) for the Florida Escarpment submarine failure. Colors in elevation legend indicate water surface elevation (MLW). Bathymetry contours indicate water depths (MLW) in meters.

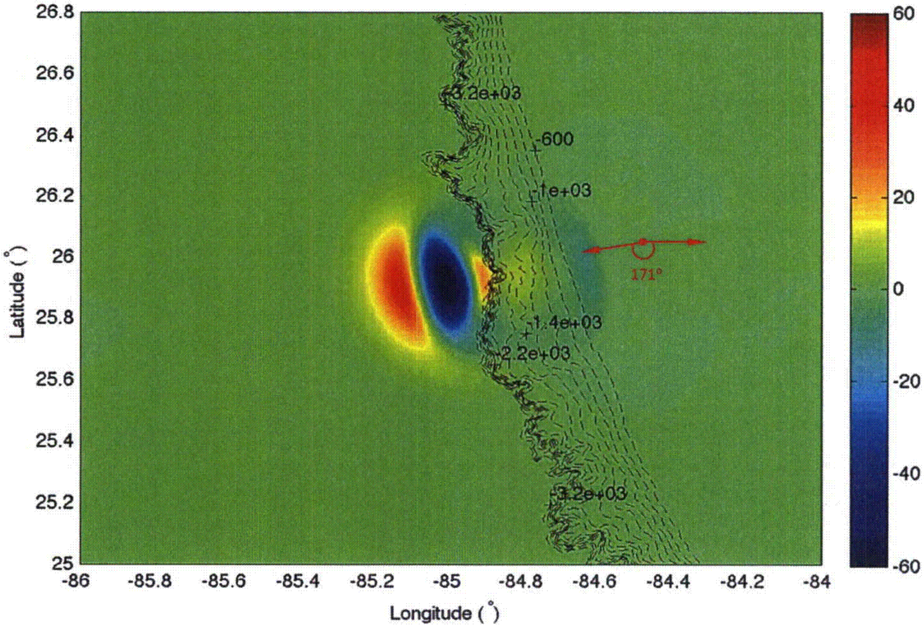


Figure 2.4.6-268. (a) Water surface profiles in the direction of the slide motion at different times after the initiation of the slide obtained from NHWAVE and (b) ocean floor profile (lower panel). The water surface profiles and cross section shown in this figure are along the minor axis of the ellipse shown in Figure 2.4.6-264. Water surface elevations in the upper panel and depths in the lower panel are relative to MLW, respectively.

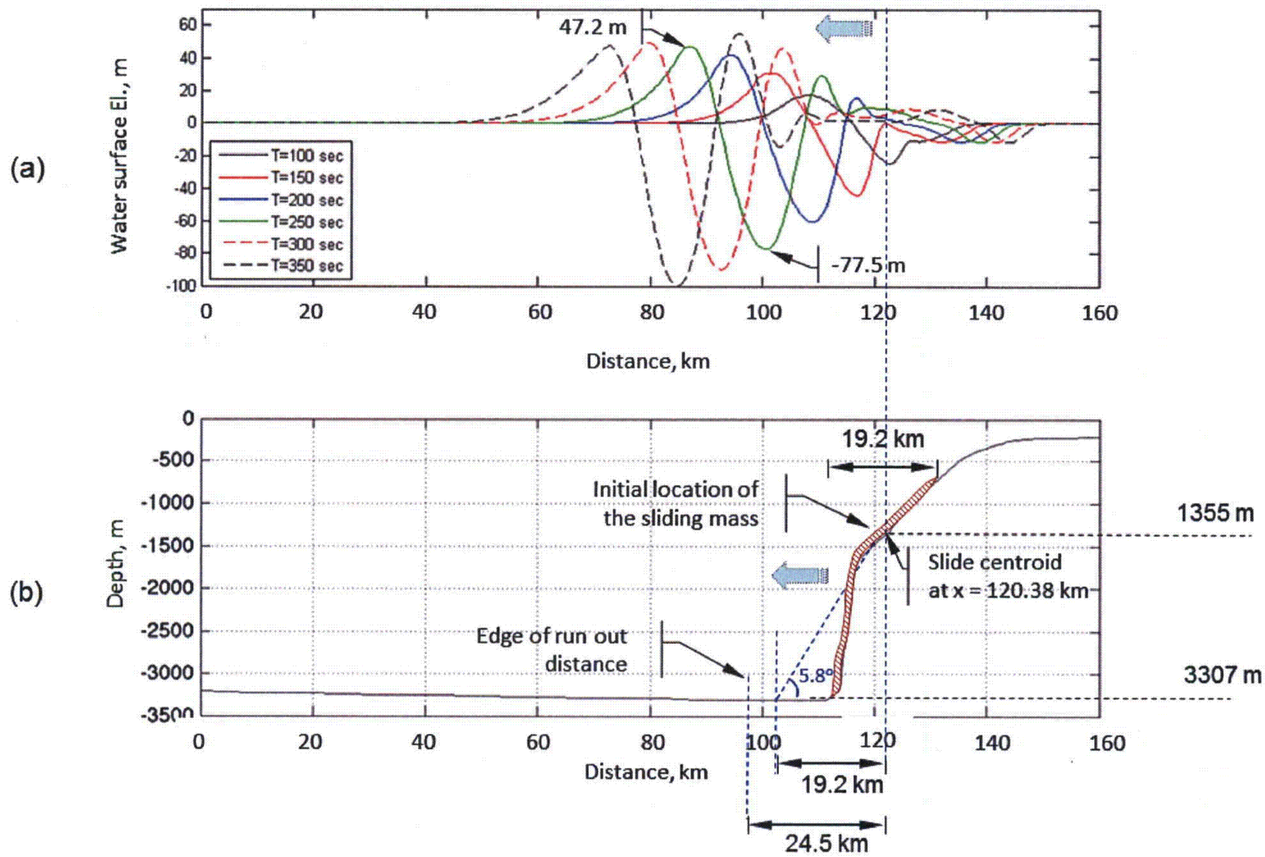


Figure 2.4.6-269. Simulated propagation of the Florida Escarpment tsunami (dynamic source) in Grid A at 0, 20, 40, 60, 80 and 100 minutes after the submarine mass failure. Colors in elevation legend represent water surface elevations in meters relative to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

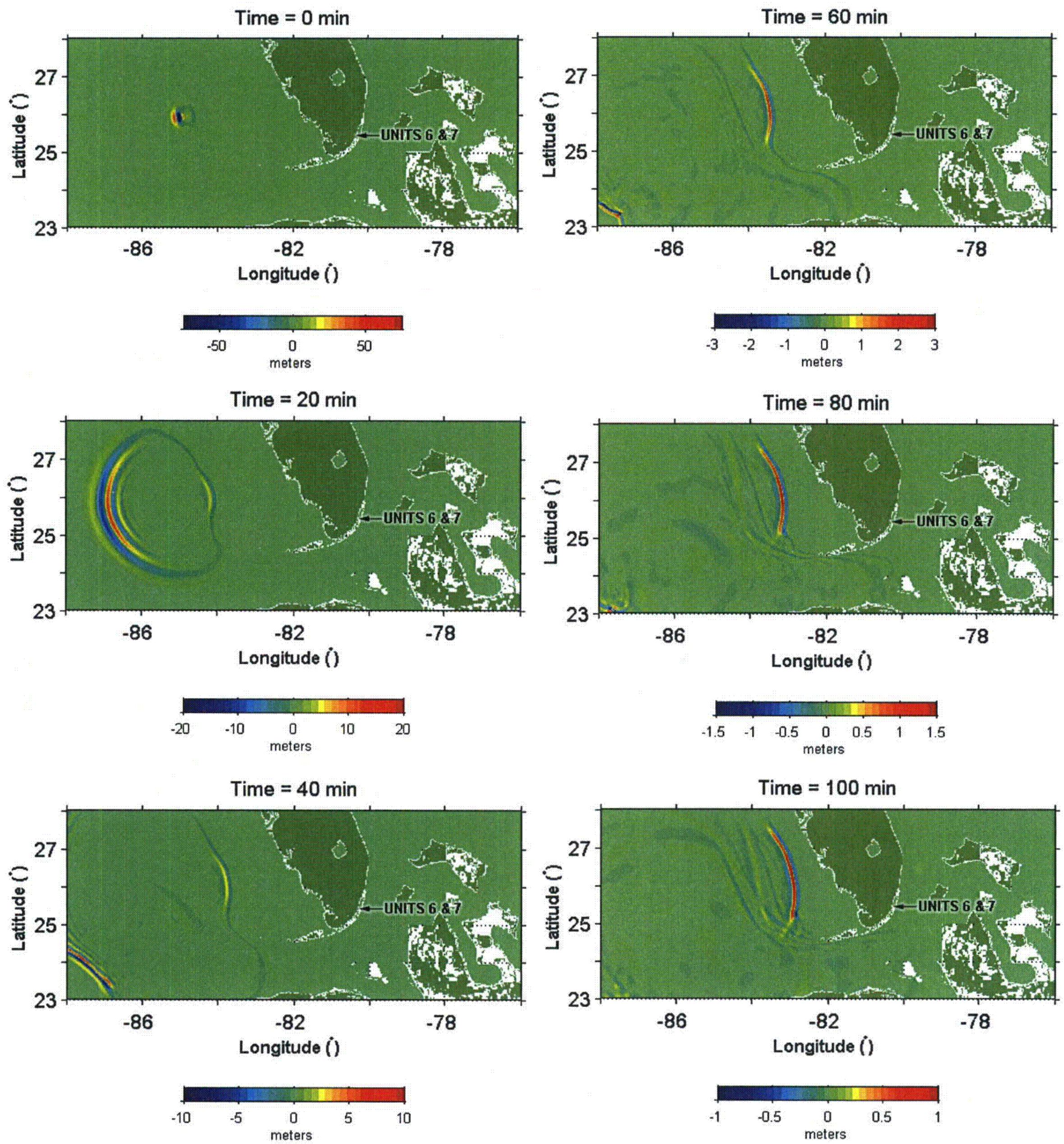


Figure 2.4.6-270. Simulated propagation of the Florida Escarpment tsunami (dynamic source) in Grid A at 120, 140, 160, and 180 minutes after the submarine mass failure. Colors in elevation legend represent water surface elevations in meters relative to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

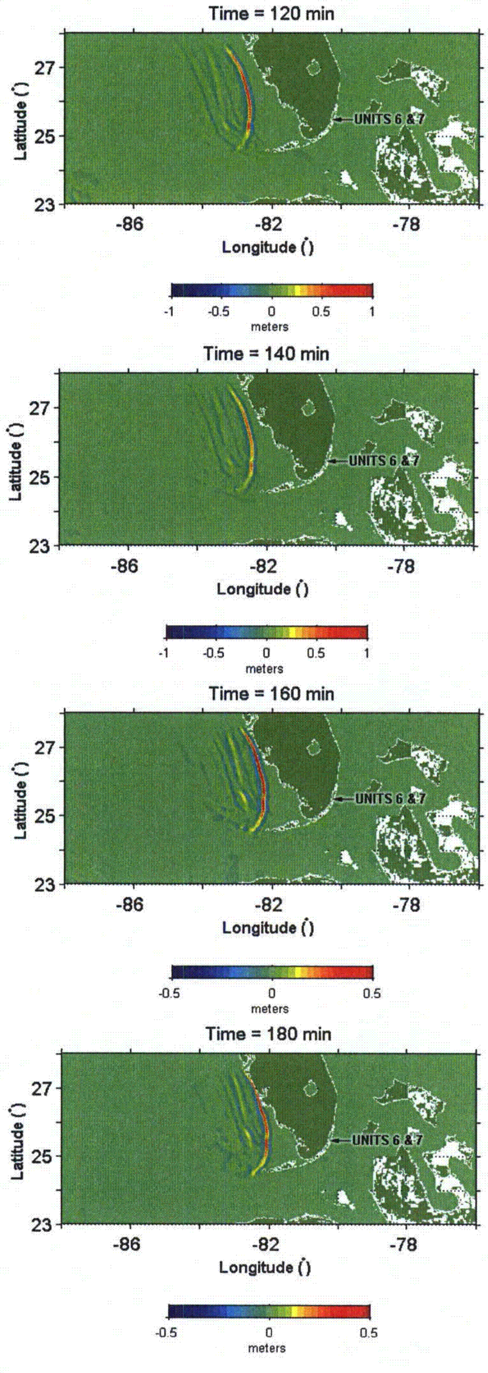


Figure 2.4.6-271. Simulated maximum wave height during the propagation of the Florida Escarpment tsunami (dynamic source) in Grid A. Colors in elevation legend represent water surface elevations relative in meters to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

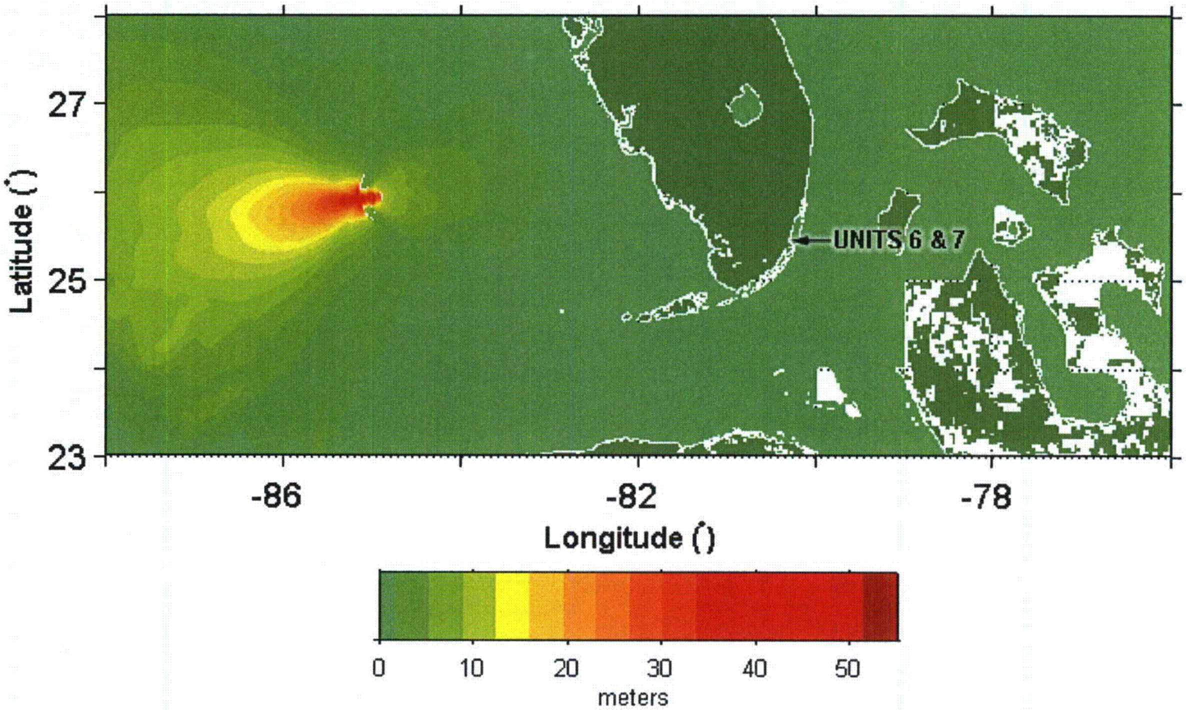


Figure 2.4.6-272. Simulated propagation of the Florida Escarpment tsunami (dynamic source) in Grid B at 80, 100, 120, 140, and 160 minutes after the submarine mass failure. Colors in elevation legend represent water surface elevations in meters relative to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

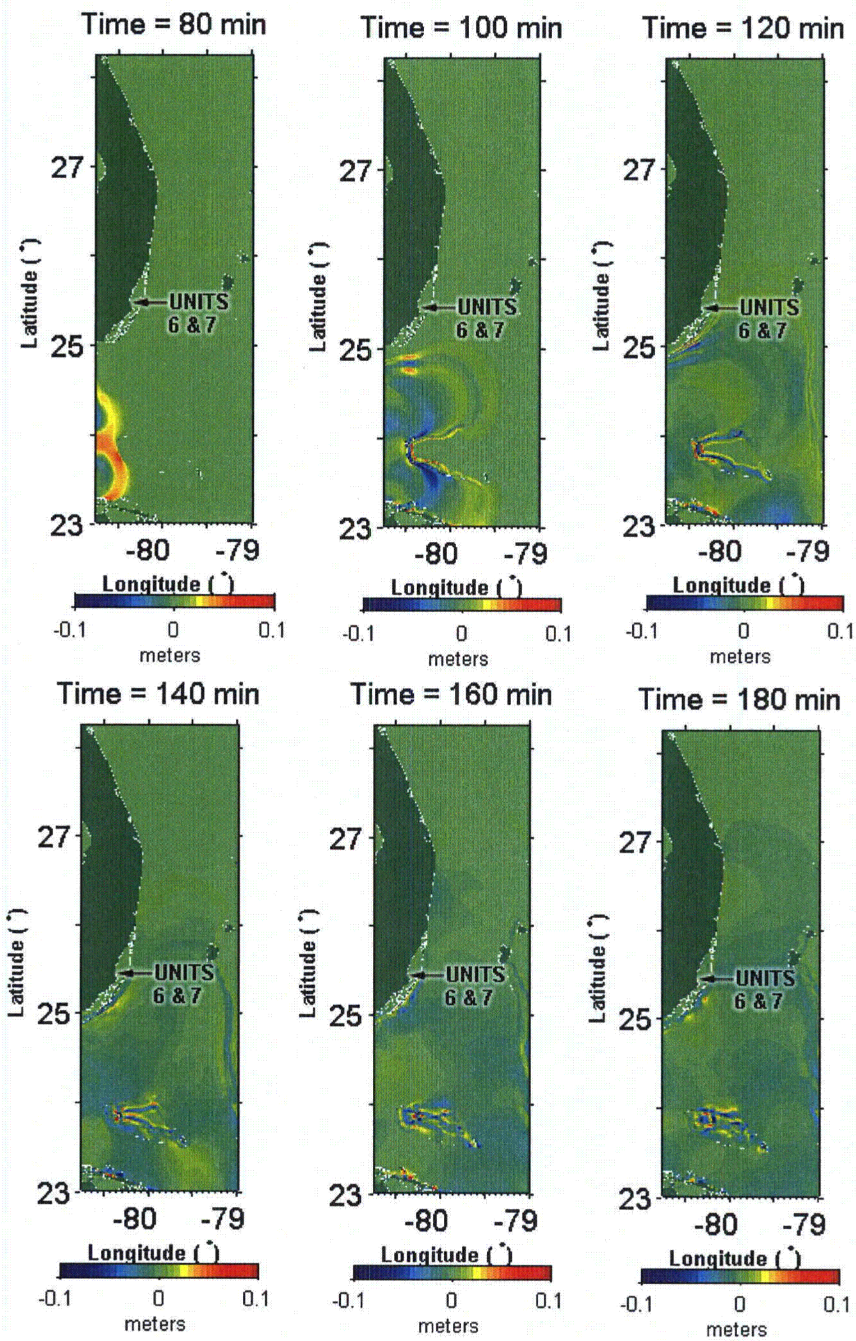


Figure 2.4.6-273. Simulated propagation of the Florida Escarpment tsunami (dynamic source) in Grid B at 200, 220, and 240 minutes after the submarine mass failure. Colors in elevation legend represent water surface elevations in meters relative to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

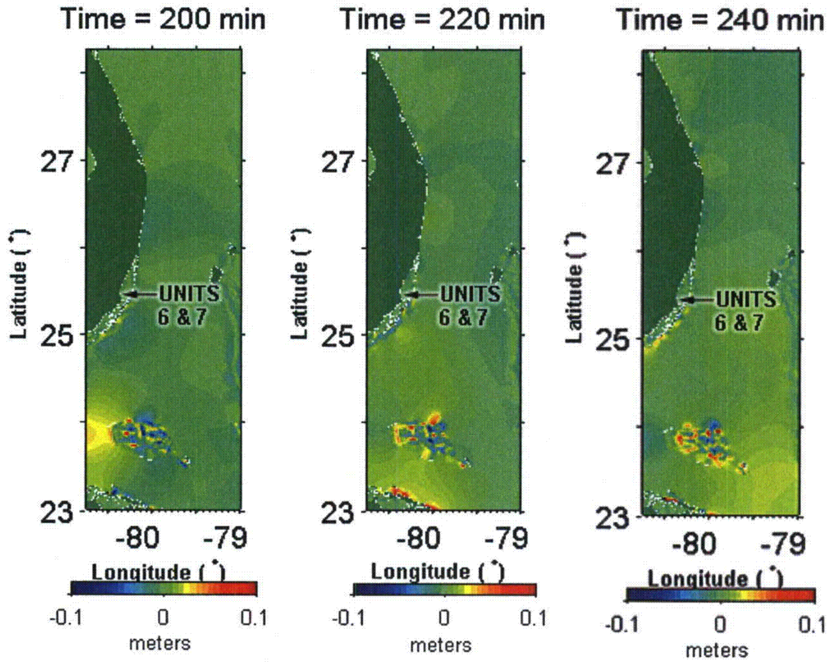


Figure 2.4.6-274. Simulated maximum wave height during the propagation of the Florida Escarpment tsunami (dynamic source) in Grid B. Colors in elevation legend represent water surface elevations in meters relative to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

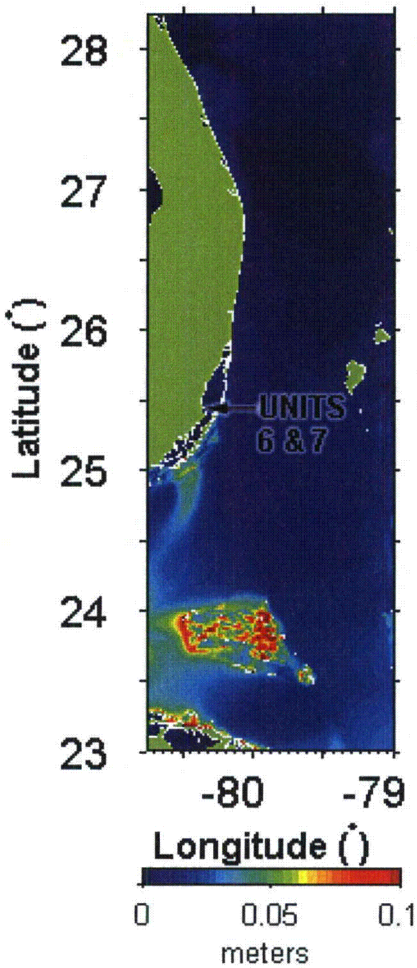


Figure 2.4.6-275. Simulated propagation of the Florida Escarpment tsunami (dynamic source) in Grid C at 140, 160, 180, and 200 minutes after the submarine failure. Colors in elevation legend represent water surface elevations in meters relative to MLW.

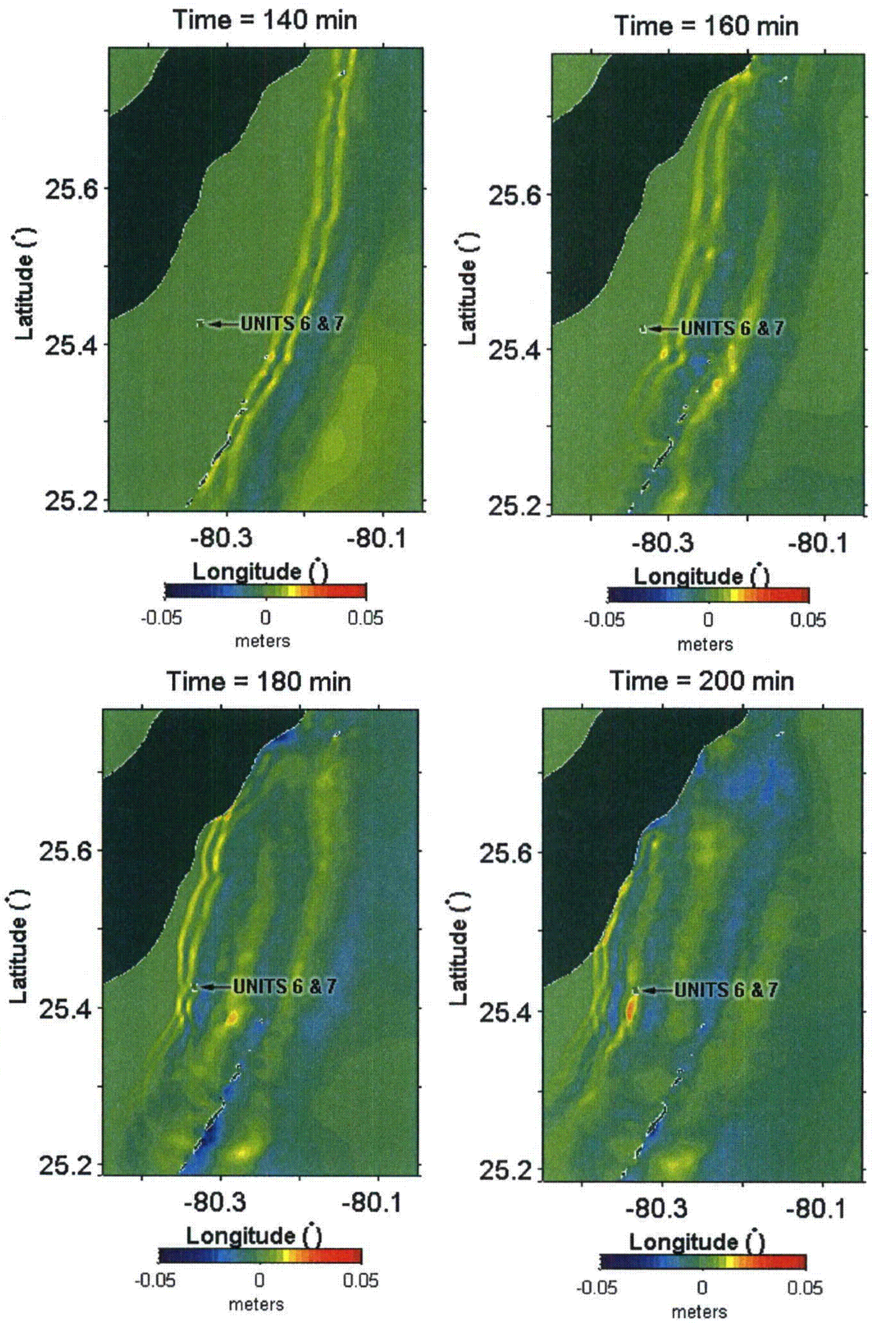


Figure 2.4.6-276. Simulated propagation of the Florida Escarpment tsunami (dynamic source) in Grid C at 140, 160, 180, 200, 220 and 240 minutes after the submarine failure. Colors in elevation legend represent water surface elevations in meters relative to MLW.

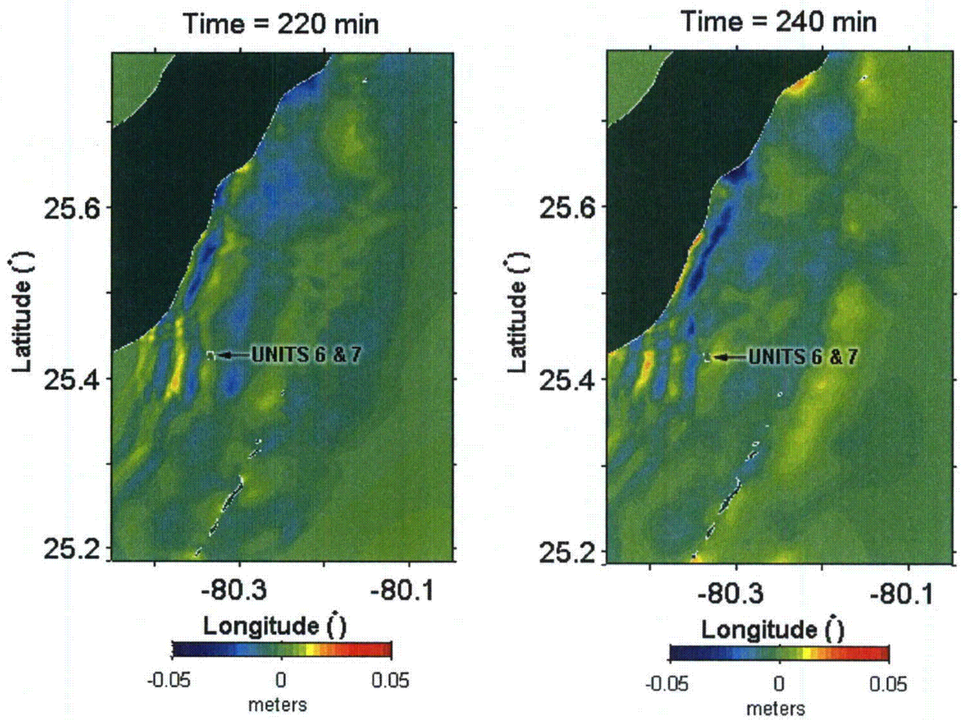


Figure 2.4.6-277. Simulated maximum water surface elevation during the propagation of the Florida Escarpment tsunami (dynamic source) in Grid C. Colors in elevation legend represent water surface elevations in meters relative to MLW.

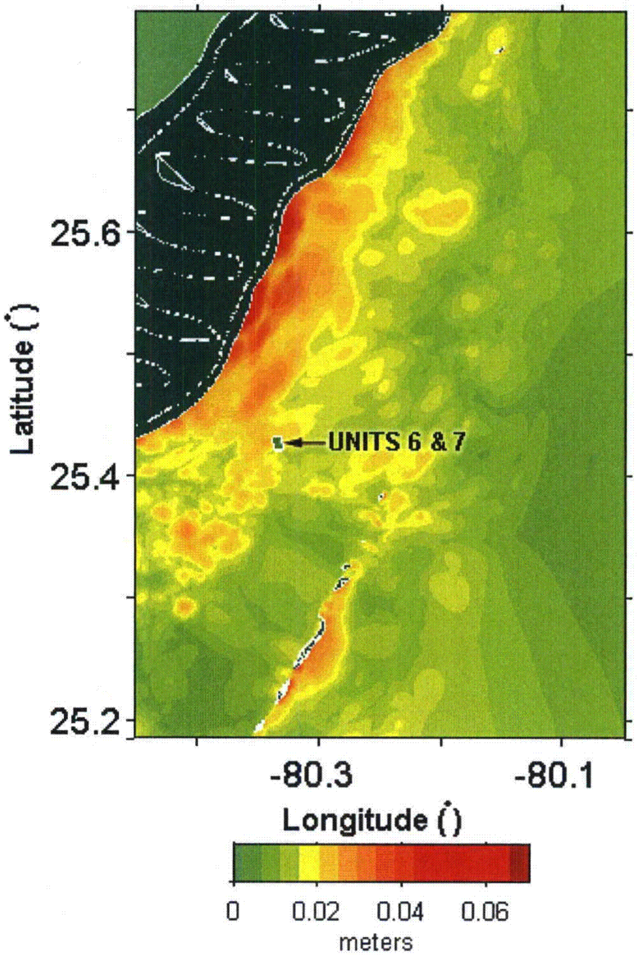
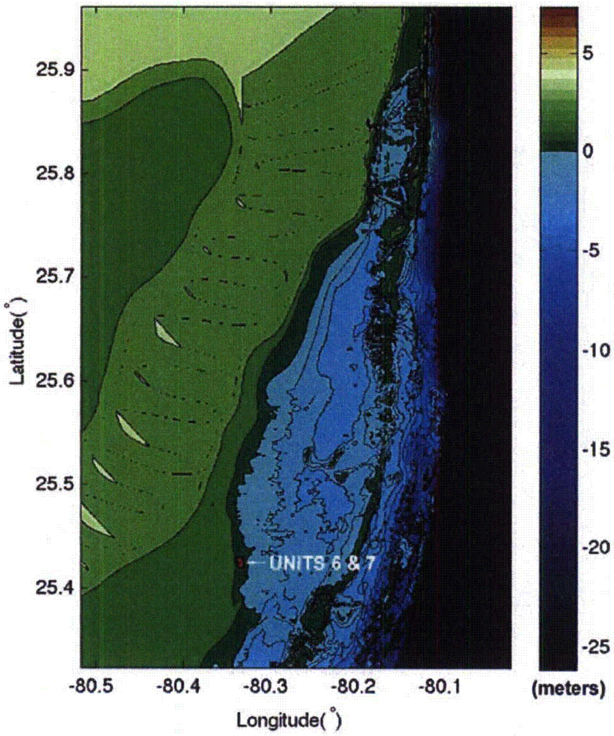


Figure 2.4.6-278. (a) Water depth relative to MLW over the area of Grid C without the water level rise that is used to define the initial condition for the tsunami propagation simulations; and (b) water depth relative to the assumed initial water surface in the Florida Escarpment tsunami simulations, i.e., 10 percent exceedance high tide + initial sea rise + long-term sea level rise. Colors in elevation legend represent water depths relative to MLW.



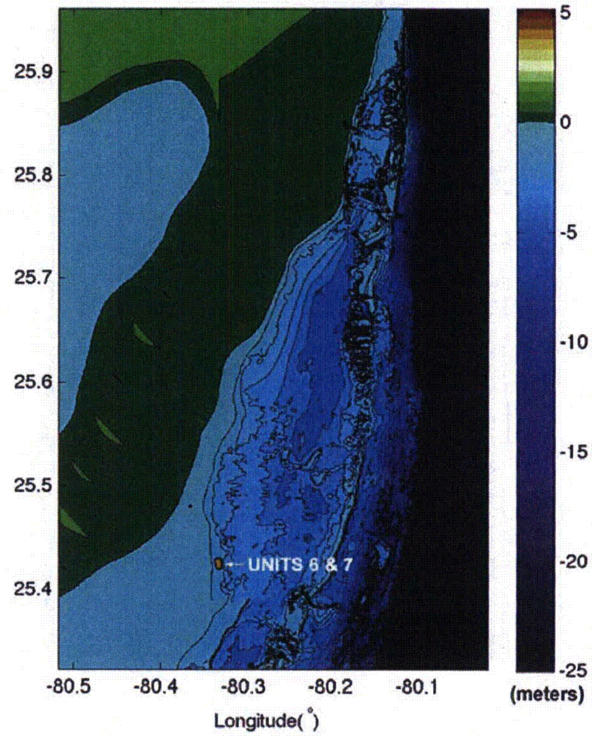


Figure 2.4.6-279. Simulated maximum water surface rise, relative to the initial sea water level, during the propagation of the Florida Escarpment tsunami (dynamic source) in the vicinity of Units 6 & 7. Colors in elevation legend represent water surface elevations in meters relative to MLW.

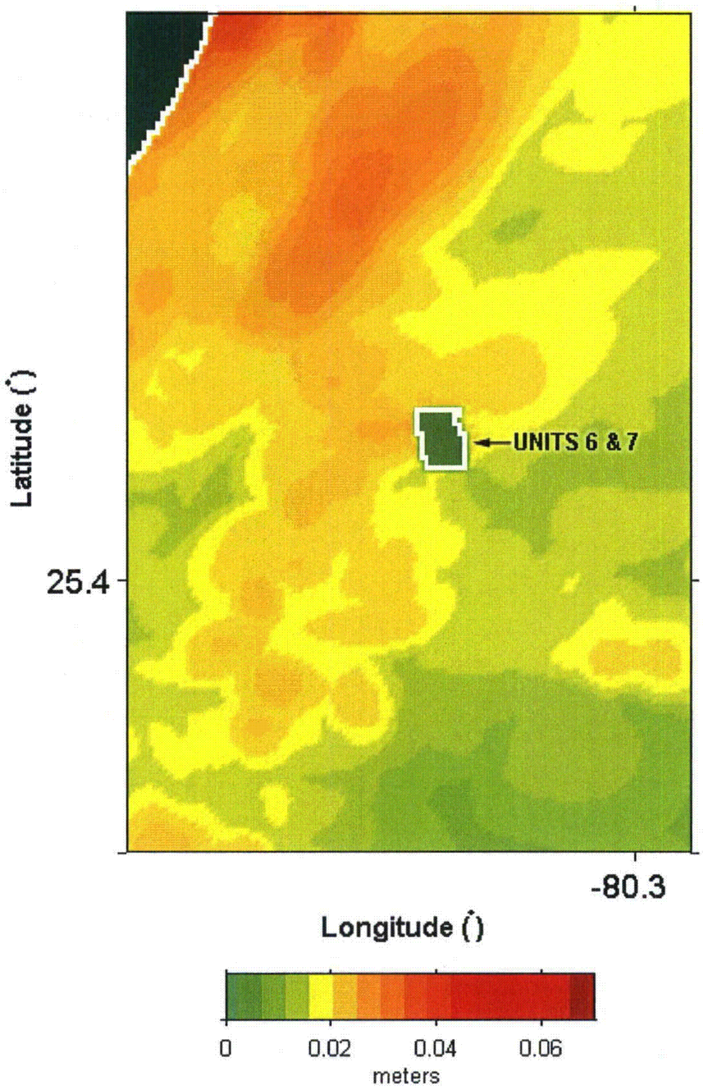


Figure 2.4.6-280. Water surface elevation near Units 6 & 7 as a function of time following the Florida Escarpment tsunami (dynamic source). Water surface elevations are relative to MLW and the initial water level.

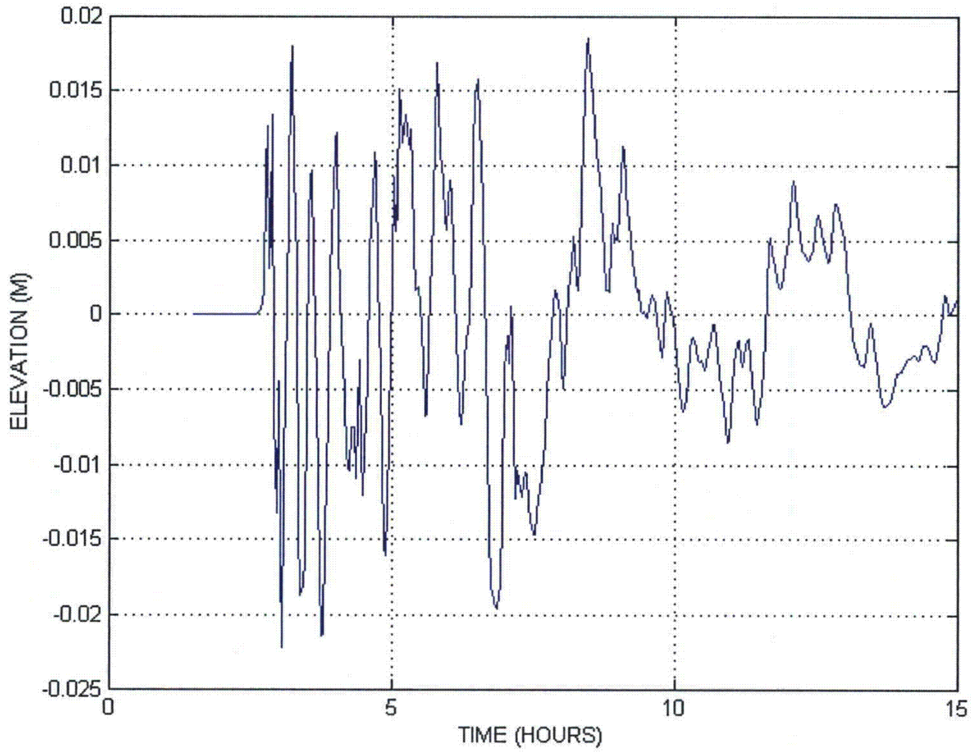


Figure 2.4.6-281. Initial wave for a static source representation of the Florida Escarpment submarine failure shown in Figure 2.4.6-264. Colors in elevation legend indicate water surface elevation (MLW). Bathymetry contours indicate water depths (MLW) in meters.

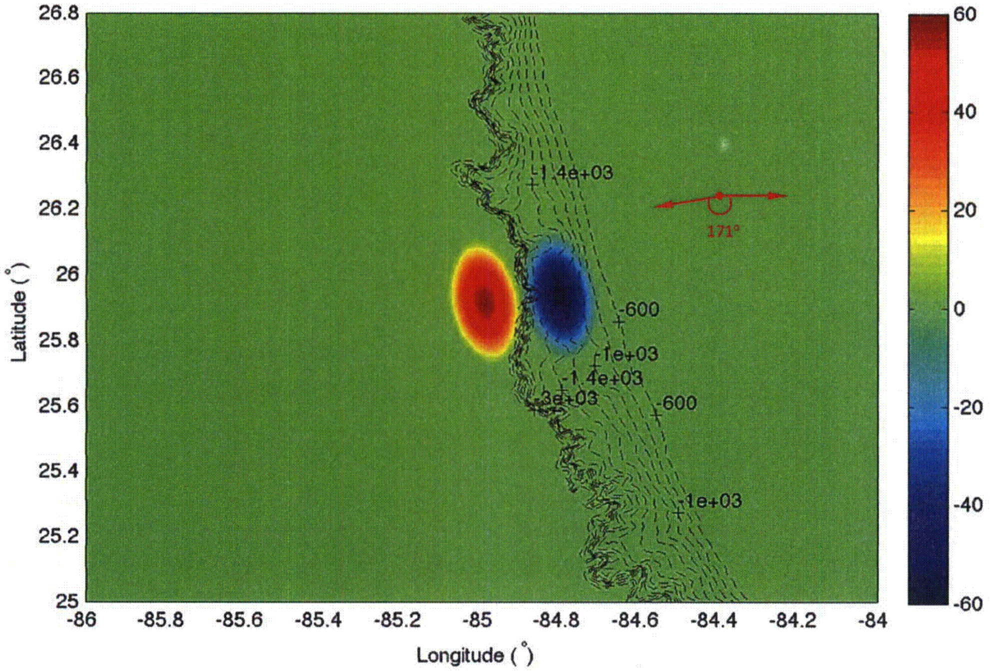


Figure 2.4.6-282. Simulated propagation of the Florida Escarpment tsunami (static source) in Grid A at 0, 20, 40, 60, 80 and 100 minutes after the submarine failure. Colors in elevation legend represent water surface elevations in meters relative to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

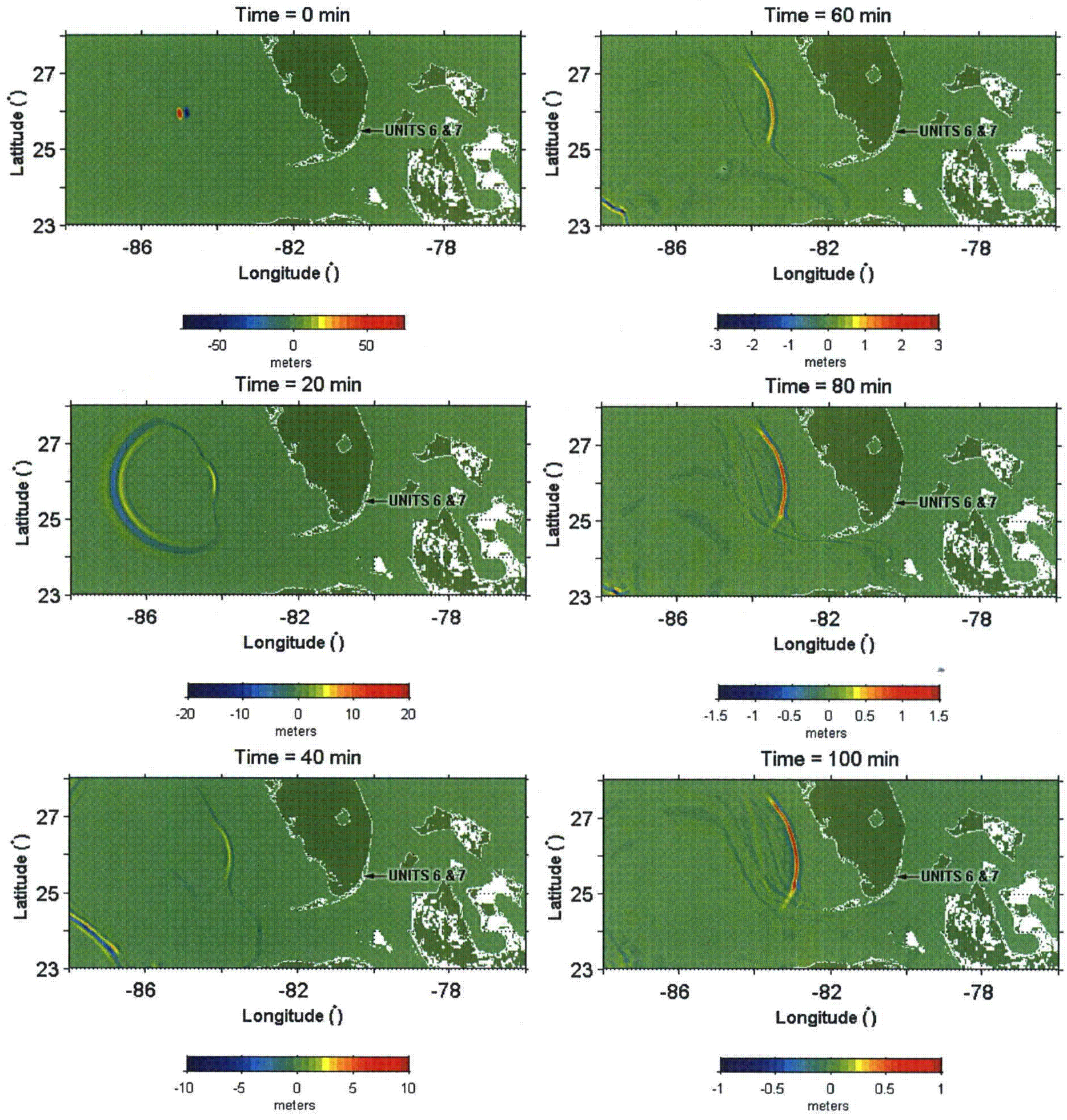


Figure 2.4.6-283. Simulated propagation of the Florida Escarpment tsunami (static source) in Grid A at 120, 140, and 160 minutes after the submarine failure. Colors in elevation legend represent water surface elevations in meters relative to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

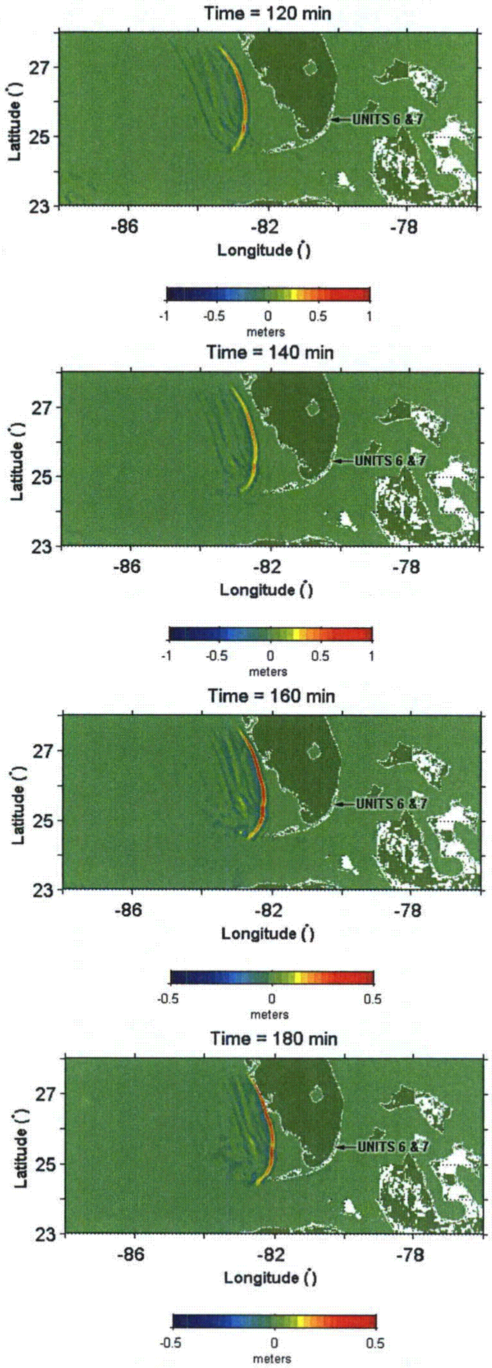


Figure 2.4.6-284. Simulated maximum water surface elevation during the propagation of the Florida Escarpment tsunami (static source) in Grid A. Colors in elevation legend represent water surface elevations relative in meters to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

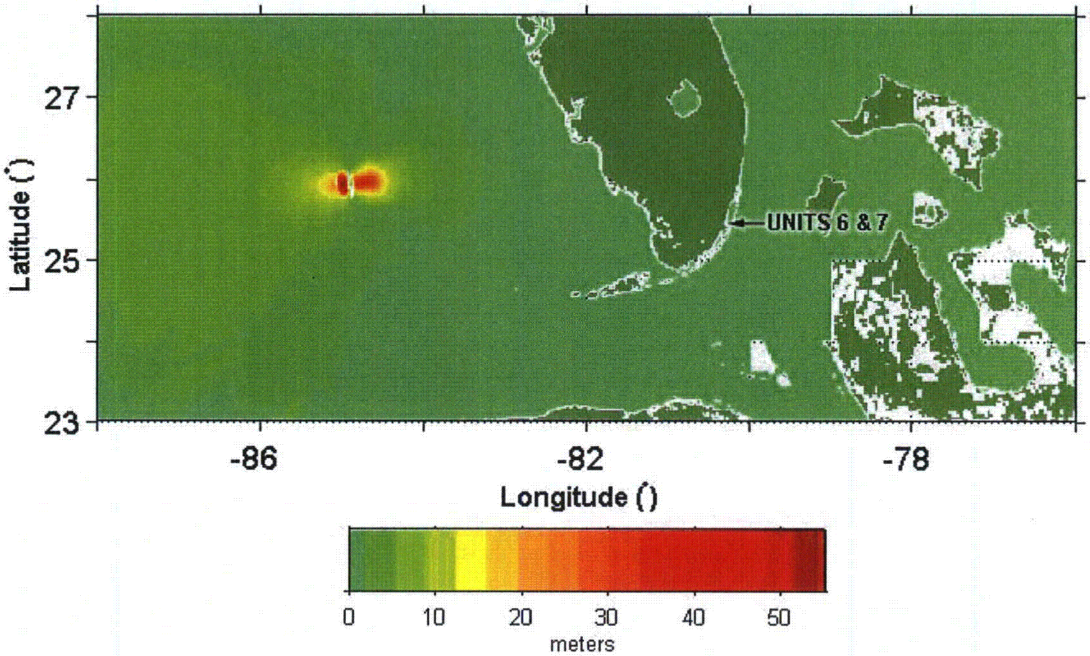


Figure 2.4.6-285. Simulated propagation of the Florida Escarpment tsunami (static source) in Grid B at 80, 100, 120, 140, 160, and 180 minutes after the submarine failure. Colors in elevation legend represent water surface elevations in meters relative to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

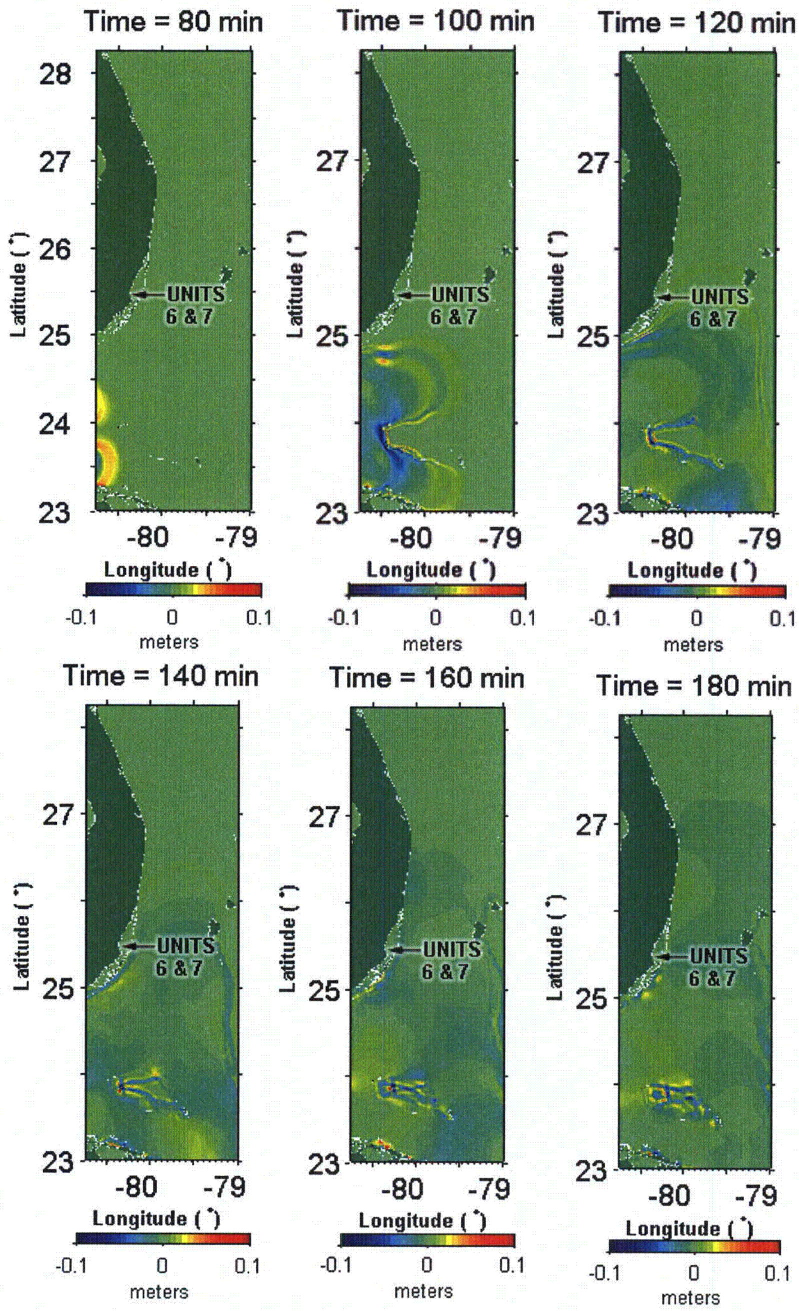


Figure 2.4.6-286. Simulated propagation of the Florida Escarpment tsunami (static source) in Grid B at 200, 220, and 240 minutes after the submarine failure. Colors in elevation legend represent water surface elevations in meters relative to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

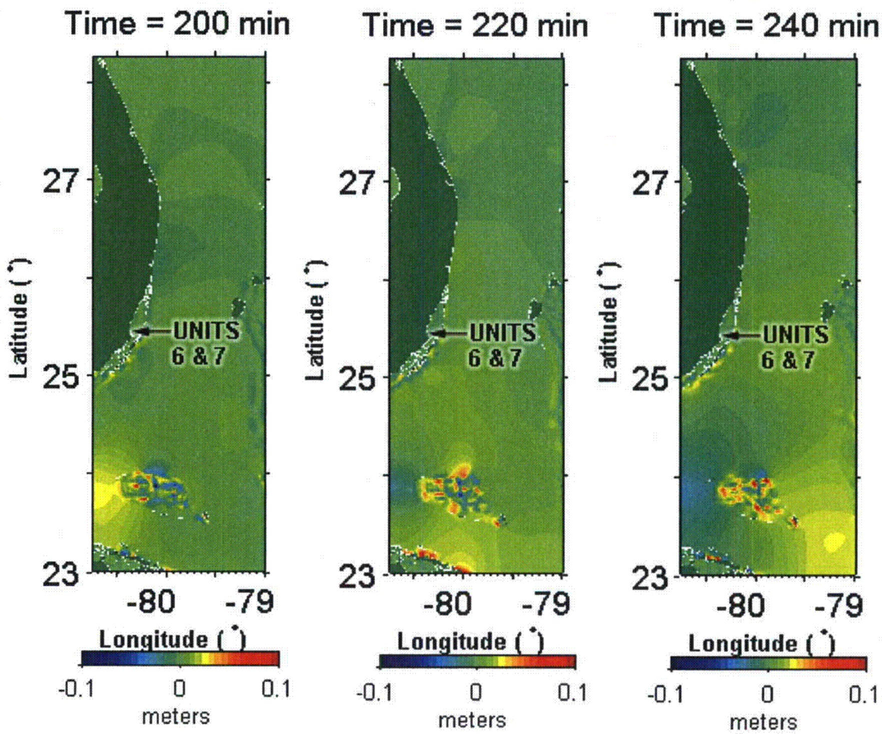


Figure 2.4.6-287. Simulated maximum water surface elevation during the propagation of the Florida Escarpment tsunami (static source) in Grid B. Colors in elevation legend represent water surface elevations relative in meters to MSL for ETOPO1 data (Reference 244) and MLW for Coastal Relief Model data (Reference 246).

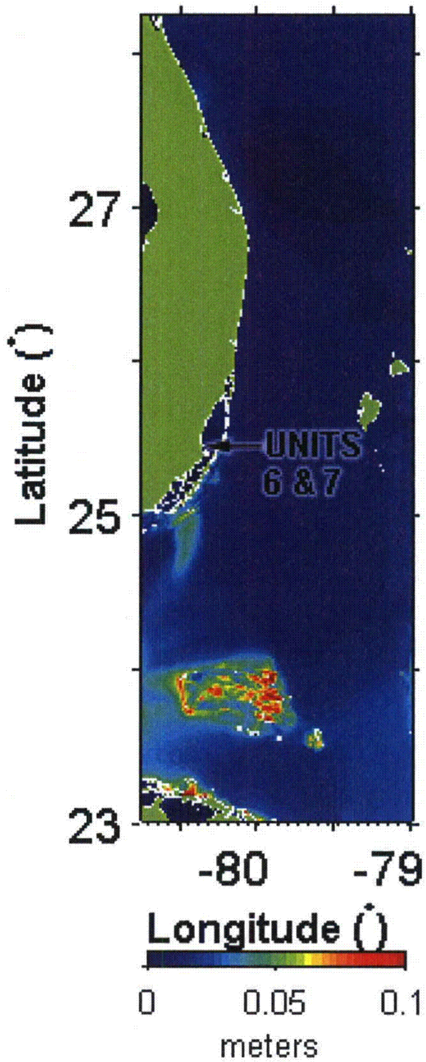


Figure 2.4.6-288. Simulated propagation of the Florida Escarpment tsunami (static source) in Grid C at 140, 160, 180, and 200 minutes after the submarine failure. Colors in elevation legend represent water surface elevations in meters relative to MLW.

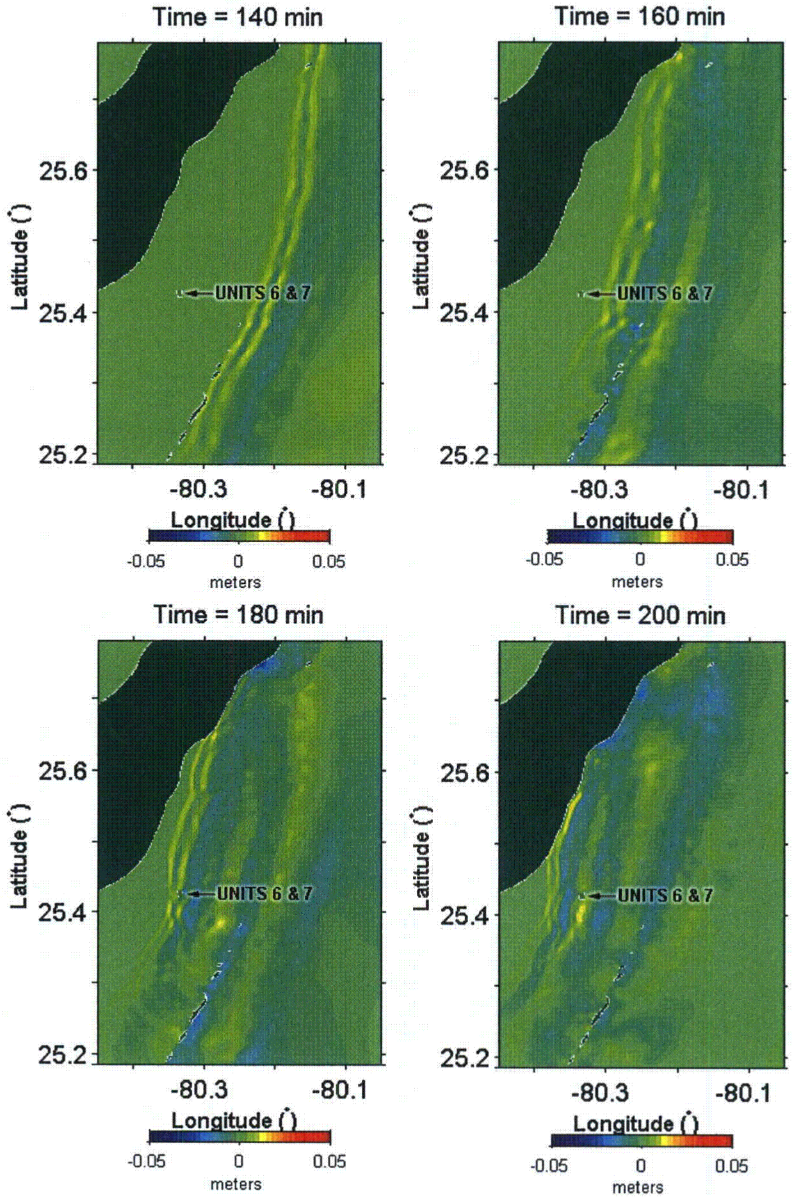


Figure 2.4.6-289. Simulated propagation of the Florida Escarpment tsunami (static source) in Grid C at 220, and 240 minutes after the submarine failure. Colors in elevation legend represent water surface elevations in meters relative to MLW.

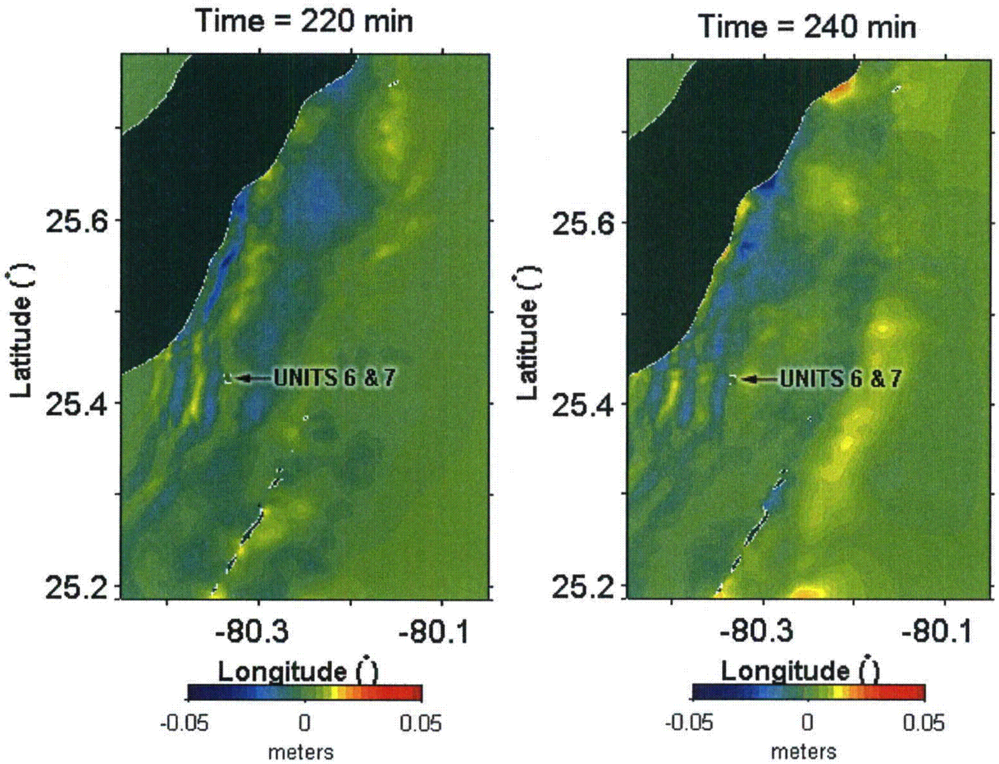


Figure 2.4.6-290. Simulated maximum water surface elevation during the propagation of the Florida Escarpment tsunami (static source) in Grid C. Colors in elevation legend represent water surface elevations in meters relative to MLW.

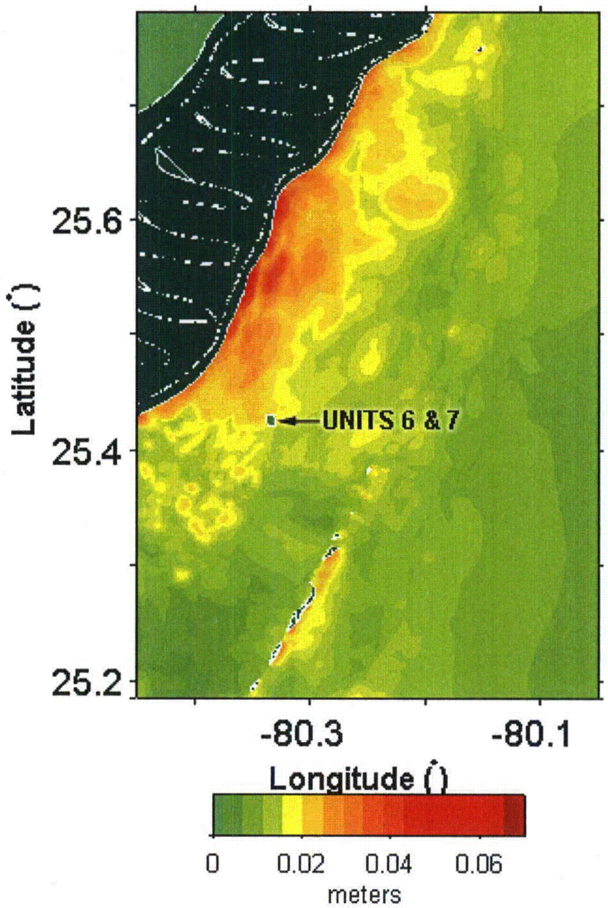


Figure 2.4.6-291. Simulated maximum water surface rise, relative to the initial sea water level, during the propagation of the Florida Escarpment tsunami (static source) in the vicinity of Units 6 & 7. Colors in elevation legend represent water surface elevations in meters relative to MLW.

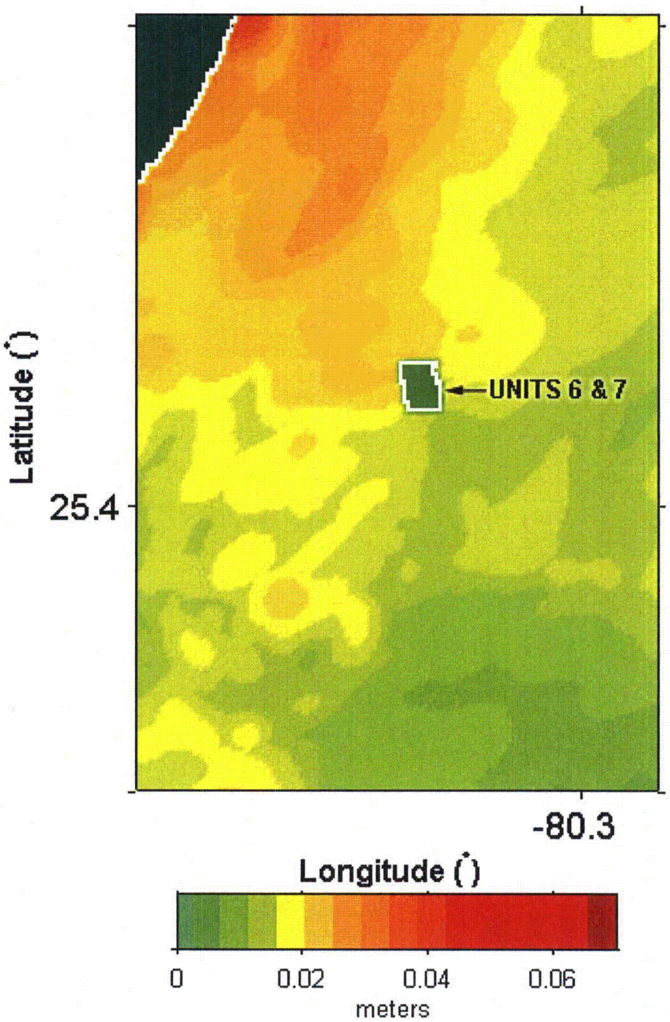
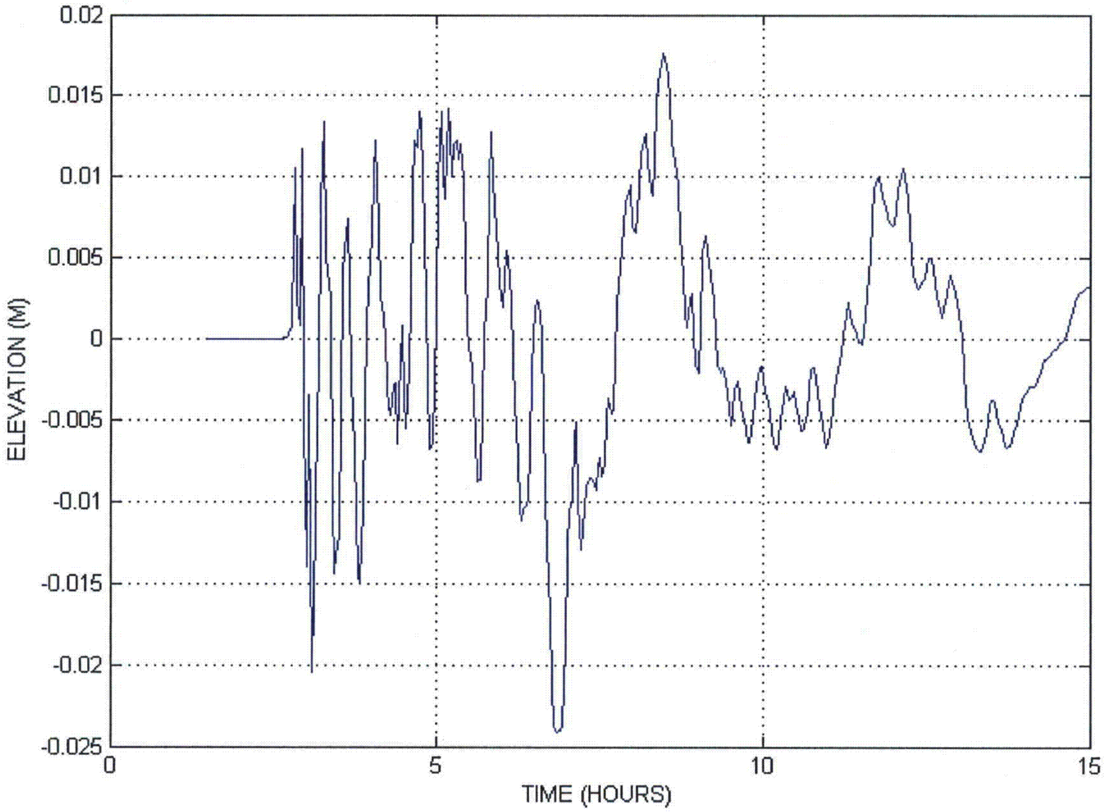


Figure 2.4.6-292. Water surface elevation near the Units 6 & 7 as a function of time following the Florida Escarpment tsunami (static source). Water surface elevations in meters are relative to the initial water level.



The following subheading and text will be added to Subsection 2.5.1.1.5 (Tsunami Geologic Hazard Assessment) above the subheading Potential Northern Coast of Cuba Tsunami Sources in a future COLA Revision:

The Unit II gravity flows are synchronous with the "Abaco episode" (associated with the Jacksonville Fracture Zone shown in Figure 2.5.1-229) in the western North Atlantic Ocean. The "Abaco episode" is represented by gravity-flow deposits spanning most of the Miocene, with sedimentation-rate peaks in the middle Miocene as described by Reference 727. The gravity flow material points to sources on the adjacent Bahama Platform, on its flanks, and on the floor of the Straits of Florida. Several other sediment gravity-flow events occurred in the region during the same period. Lower to middle Miocene gravity-flow deposits were cored at Sites 627 and 628 (Figure 2.5.1-211) and large middle Miocene slumps were identified from seismic profiles north of Little Bahama Bank near Sites 627 and 628 (Reference 476). However, these deposits differ in scale and lithology from those at Site 626. The Great Abaco Member of the Blake Ridge Formation in the Blake-Bahamas Basin (for location see Figure 2.5.1-214), penetrated at DSDP Sites 391 (Reference 422) and 534 (Reference 728), contains gravity-flow deposits that span most of the Miocene, with sedimentation-rate peaks in the middle Miocene. Off the west coast of Florida, Mullins et al. (Reference 305) document a middle Miocene slide scar that resulted from the failure of a 120-kilometer (93-mile) length of the western margin of the Florida carbonate platform. The timing of these flow events suggests the possibility of a common paleotectonic cause. While there is clear evidence of past submarine landslides near the Florida Peninsula, the stratigraphic record, especially from drill cores, is incomplete for use in evaluating the aerial extent of landslide effects.

Potential West Florida Escarpment Tsunami Sources

Further information on the potential West Florida Escarpment sources is further discussed in Subsection 2.4.6.1.2 Submarine Landslides in the Gulf of Mexico.

Potential Northern Coast of Cuba Tsunami Sources

Subsequent to the 2004 Indian Ocean tsunami, Cuban geologists began reexamining the historical, geologic, and seismic records of Cuba to evaluate potential tsunami hazards. Iturralde-Vinent (Reference 742) summarizes the current understanding of tsunami hazards in Cuba with a simple graphic (Figure 2.5.1-345). The graphic indicates large marine boulders deposited on the southern coast of Cuba, possibly by tsunamis, on the extreme southwestern coast, on the Isla de la Juventud, and along the seismically active southeastern coast of Cuba. Iturralde-Vinent (Reference 742) also identifies a significant coastal area of northwestern Cuba as a zone of potential tsunami hazards, with evidence of medium size carbonate boulders emplaced by waves on coastal terraces. A hazard zone for 3-meter (10-feet) high tsunamis is located on the northern coast of Cuba, between the cities of Havana and Matanzas (Figure 2.5.1-345).

ASSOCIATED ENCLOSURES:

None