

Professional Services

EVACUATION TIME ESTIMATES AND EMERGENCY PLANNING



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KLD, founded in 1971, now refers to two affiliated companies: KLD Associates, Inc. and KLD Engineering, P.C. Each company operates in its respective area of specialization, while fluidly sharing resources and professional staff. This brochure provides some highlights of our services. Contact us for additional information. We will be pleased to discuss our capabilities with you.

Our areas of expertise include, as shown by selected projects:

Emergency Preparedness

- HAZMAT and terrorist incidents in the Washington D.C. Metro Area
- Hurricane evacuation of the Shirley-Mastic Peninsula, Town of Brookhaven, NY
- Evacuation of the New Hampshire Motor Speedway
- Evacuation for a major pharmaceutical research building
- Evacuation plans for three chemical stockpile sites in the United States as part of the Chemical Stockpile Emergency Preparedness Program (CSEPP)
- Staged evacuation studies

Model Output



Evacuation Modeling

KLD uses an enhanced suite of evacuation models for its work in emergency preparedness and evacuation, which is generally done for government agencies and utilities/licensees. This suite has its roots in the model KLD originally developed for FEMA, and includes an integrated traffic assignment and distribution model (TRAD), a macroscopic traffic simulation model designed for evacuation environments (PCDYNEV), an interactive data entry software system (UNITES) and evacuation animation software (EVAN) which shows congested paths during evacuation. The suite has been interfaced with other models.

Track Record

- KLD representatives participated as ETE subject matter experts on the Nuclear Energy Institute (NEI) taskforce reviewing proposed NRC Emergency Preparedness rulemaking and guidance
- KLD has extensive knowledge of federal regulations and guidance relative to evacuation and emergency preparedness
- KLD provided expert testimony on ETE before the Atomic Safety and Licensing Board (ASLB) in support of the Shoreham and Seabrook license applications
- KLD coordinates with the industry to meet pressing deadlines of COLA, ESP and other projects
- KLD is available to clients 24/7, given the nature of the work



KLD has performed ...

ETE studies for 40% (42 of 104) of the operating units in the US over the last 30 years

ETE studies *internationally*, including 6 sites in Japan, 2 sites in Canada and 1 site in Taiwan

Evacuation Time Estimates (ETE) in Support of COL and ESP Applications for New Nuclear Plants

KLD has performed ETE studies in support of Combined Operating License (COL) and Early Site Permit (ESP) applications for new nuclear plants. In fact, KLD has performed the ETE studies for 15 of the 18 COL/ESP applications currently on file with the Nuclear Regulatory Commission (NRC).

- Bell Bend Nuclear Power Plant
- Bellefonte Nuclear Station
- Calvert Cliffs
- Comanche Peak
- Fermi
- Grand Gulf
- Levy County
- Nine Mile Point
- North Anna
- River Bend Station
- Shearon Harris
- South Texas Project
- Turkey Point
- Virgil C. Summer
- William States Lee III

Evacuation Time Estimates for Operating Nuclear Plants

Operating nuclear power plants typically review and update ETE studies after each Census. KLD performed ETE studies for the following operating plants after the 2000 Census:

- Brunswick
- Crystal River 3
- Davis-Besse
- Ginna
- Hope Creek
- Indian Point
- Pilgrim
- Seabrook
- Vermont Yankee

Most of the COLA/ESP sites also have operating units. The ETE studies that support the COLA/ESP are also applicable to the operating units.

Traffic Impact and Mitigation

Construction of new nuclear plants and outages at existing plants involve significant increases in traffic at the site. A Traffic Impact Analysis (TIA) should be undertaken to ensure efficient traffic flow during these events. Coordination of TIA and ETE studies is key. KLD has performed TIA studies in coordination with ETE studies at the following COLA sites:

- Bell Bend Nuclear Power Plant
- Calvert Cliffs
- Nine Mile Point

Related Services

- Geographical Information Systems (GIS)
 - > Production Quality Maps
 - > Geo-Database Creation (i.e., inventory of special facilities within an area)
- Traffic Engineering in addition to impact and mitigation
- Development of Traffic Management Plans
- Determining Placement of Evacuation Route Signage
- Development of Evacuation Bus Routes for Transit-Dependent population
- ETE Sensitivity Studies for large-scale special events (e.g., sporting events, college graduations, state fairs)



KLD has served the industry directly, and by partnering or joining teams with organizations such as:

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|------------------------|-------------------------------|------------------------------|
| - AREVA | - Duke Energy | - Progress Energy |
| - Bechtel | - Enercon Services | - PSEG |
| - Black & Veatch | - Entergy | - Sargent & Lundy |
| - CMCG | - Florida Power & Light | - Tennessee Valley Authority |
| - Constellation Energy | - Japan Nuclear Energy Safety | - UniStar Nuclear |
| - Detroit Edison | - Luminant | - Witt & Associates |

Contact 631.617.5650

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Ask us about fleet-wide ETE updates