

LOL-HECO-IR-4

Ref: “catastrophic underground duct bank failure” (HECO Application, page 20)

Question(s):

- a. How often has a catastrophic underground duct bank failure occurred within the HECO system in the past 25 years?
- b. What documents is HECO relying on in believing that this is a treat?

HECO Response:

- a. A catastrophic underground duct bank failure in a duct bank containing a 138kV transmission line has not yet occurred. However, there was one incident involving underground duct banks holding 12kV circuits which HECO would consider as a catastrophic underground duct bank failure. This occurred in July 2000, when the duct bank failed as a result of a fault on one of four 12kV circuits housed by the duct bank. The duct bank consisted of four 5” PVC ducts (Type EB) and was encased in concrete. Approximately 390 feet of duct bank failed and was replaced.
- b. There are no specific reports or studies which HECO is relying on. However, failures and faults on high voltage equipment can occur and cause damage as explained in the response to subpart a. There are other situations which could potentially cause damage to a duct bank, such as road construction work in the area of the duct bank. As stated in HECO T-4, page 48, the concern for the reliability of the three Downtown Substations is not as critical as the Pukele Substation reliability due to the differences in age and exposure to outages for each location. The Kamoku 46kV Underground Alternative – Expanded was evaluated on its effectiveness to address a number of problems which include the Koolau/Pukele Line Overload Situation, the Pukele Substation Reliability Concern, the Downtown Line Overload Situation and the Downtown Substation Reliability Concern.