

LOL-HECO-IR-32

Ref: “While many parts of the two lines have been renewed and upgraded, the two Koolau-Pukele lines are substantially 40 years old.” (Exhibit 5, page 44)

Question(s):

- a. Which parts of the Koolau-Pukele transmission system are 40 years old?
- b. Which parts of the Koolau-Pukele transmission system have been replaced?
- c. Which part of the Koolau-Pukele transmission system could not be replaced?
- d. What is the current estimate of when the lines will need to be retired and/or replaced?

HECO Response:

- a. HECO objects to this question as it would be unduly burdensome to identify the individual parts of the Koolau-Pukele 138kV transmission lines that are 40 years old. Without waiving its objections, HECO responds as follows: The Koolau-Pukele 138kV transmission lines were installed in the early 1960’s. Thus, as a whole, the transmission lines are over 40 years old. Within the 40 plus year period that the lines have been in service, HECO has continually performed normal maintenance or made repairs to the lines to ensure its reliability. This maintenance would include replacing insulators, conductors, poles, guy wires, etc. Thus, while the lines as a whole are over 40 years old, there are individual components which may be less than 40 years old.
- b. HECO objects to this question as it would be unduly burdensome to identify the individual parts of the Koolau-Pukele 138kV transmission lines that have been replaced. Without waiving its objections, HECO responds as follows: HECO recently replaced two key structures on the Koolau-Pukele lines. The structures which HECO replaced are the Koolau-Pukele #2, Structure #2 (“Str #2”) and the Koolau-Pukele #1, Structure #9 (“Str.

#9"). Routine inspections in the early 1998 revealed that these two aluminum lattice towers on the ridge above Palolo Valley were severely deteriorated (due to age, high winds, and the extreme terrain) and individual members (parts of the lattice structure) were observed to be deformed and the structures were leaning out of plumb. Therefore, HECO initiated replacement projects for both structures, which replaced the existing lattice structures with galvanized and painted tubular steel H-frames designed to withstand hurricane force winds. The Koolau-Pukele #1, Str. #9 structure replacement project was started in 1999 and completed in 2000, and the Koolau-Pukele #2, Str. #2 was started in 2000 and completed in 2001.

In addition, six poles have been replaced since the original installation of the transmission line; one pole was replaced in 1981, two poles in 1987, two poles in 1990 and one pole in 1991.

- c. HECO has not identified if there are any sections that cannot be replaced. It is reasonable to assume that if the line can be de-energized and all the necessary easements secured, all of the line could be replaced.
- d. HECO does not have plans to retire the two Koolau-Pukele 138kV transmission lines. However the Commission has approved average service lives as shown in LOL-HECO-IR-25, subpart d.