

1 Q. [Account I03 - Insulators] - Regarding the insulator replacement programs
2 referenced on Attachment 1 to response CA-NLH-91, please provide a detailed
3 narrative identifying, explaining and justifying the specific insulator replacement
4 programs. The information should include when the program was first initiated as
5 well as its current status, the reasons for implementing the programs, and why it
6 was necessary to retire approximately \$1.3 million of investment at age 20.5 years
7 associated with transmission lines TL229 and TL226. Finally, identify current plans
8 to retire additional insulators associated with the insulator replacement program,
9 providing all underlying documents associated with any future anticipated
10 replacement program activity.

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13 A. The insulator replacement program was initiated in 1995 to replace a particular
14 brand of insulators, Canadian Ohio Brass (COB). The suspension porcelain and pin
15 type porcelain insulators of this brand were mainly targeted as these were proven
16 to fail prematurely due to cement growth occurring between the porcelain material
17 and the connecting hardware.

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19 The retirement of \$1.3 million of investment at 20.5 years involved the retirement
20 of approximately \$1 million of Ohio Brass (OB) polymer horizontal line post
21 insulators. These insulators were constructed from ethylene-propylene diene
22 monomer type polymer and had a leakage distance of only 90 inches causing
23 continuous failures. This experience indicated that this type of insulator was not
24 suitable for a coastal environment due to salt contamination and were therefore
25 replaced with silicone rubber horizontal line post insulators. The remaining \$0.3
26 million of retirements at 20.5 years involved the replacement of COB suspension

1 type insulators due to cement growth. These insulators were replaced with NGK
2 porcelain suspension type insulators.

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4 Since this brand of insulators has been replaced there has been no established
5 insulator replacement program in place and currently there is no initiative or
6 documentation to support the revival of the program. However, there is the
7 potential for future projects on transmission lines TL221 and TL227 that could
8 involve insulator retirements. The projects would involve switching from a cross
9 arm/line post configuration to a davit arm/anti-fog suspension type arrangement in
10 certain areas of high salt contamination to improve upon the performance of the
11 lines.